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MEDICAL REVIEW:

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THE

BIRMINGHAM MEDICAL REVIEW.

JULY, 1892.

ORIGINAL COMMUNICATIONS.

SOME OBSERVATIONS UPON THE MOUTH AND TEETH DURING PREGNANCY.

BY WILLIAM ELLIOTT, L D.S R.C.S.
LECTURER ON DENTAL MECHANICS IN QUEEN'S COLLEGE.

It is now generally admitted that the teeth are less able to resist the strain made upon them in common with the other parts of the body. Women especially suffer from diseases of the teeth, and more markedly so during the periods of gestation and lactation; so that pregnancy is a condition in which there is a predisposition to caries and other changes in the mouth.

Whatever may be the truth of the old saying, "for every child a tooth," it is nevertheless apparent that at this time the mouth secretions are subject to considerable alteration; the teeth are liable to caries of a more or less distinctive character, and there are general pathological changes not present at other times.

1. *The condition of the gums.*—Most frequently associated with pregnancy, and generally where the state of the teeth is soft and where "white" caries is present (to which I shall refer) is found an anæmic gum. It is often seen in cases of frequently recurring pregnancy. The margins of the gums are thin, pale, and somewhat shrivelled in appearance, and apparently withdrawn from the necks of the teeth; very often there is seen a prominent ridge a little beyond the free border, and this is sometimes of a deeper tint than the surrounding membrane.

In other cases the gums are of a full colour, with the margins rounded but not much thickened. They are separated from their attachments to the necks of the teeth, and on gently pressing a thin fluid and sometimes pus will ooze from around the neck of the tooth and free border of the gum. This condition is found where there is no reason to suspect any negligence or uncleanliness, and appears to be due to a state of passive congestion owing to impeded circulation, in the course of which a serous or corpuscular transudation takes place through the walls of the distended veins. Of course these two conditions of the gums are not always present, but the first especially is by no means of infrequent occurrence.

2. *The Secretions.*—The changes that take place in the oral and buccal secretions are very probably a potent cause of caries. The secretion of saliva is increased to a great extent. The salivation in some cases is as complete as if caused by mercury, but there is no soreness of the gums or fœtor as is the case when that drug is used to excess. This condition generally shews itself early, and I believe disappears about the third or fourth month. So far as the composition of the saliva is known, at this time it shews that both its organic and inorganic constituents are decreased, and very often pytalin is absent (vide *Dental Cosmos*, September, 1889. 712). Litmus paper shews an acid reaction in the early part of the day, there is an acid taste in the mouth, and the sickness that often occurs renders it more pronounced. Presumably the excessive flow of saliva is caused by the acid matter regurgitated from the stomach, which stimulates the glands.

Much has been written on this point by various writers, but all agree that acid reaction of the secretions points to a cause for the extensive and rapid disintegration of the tooth structures.

3. *Caries.*—The teeth are more generally than not affected by caries. The first kind may be termed "brown" caries, inasmuch as the teeth appear discoloured. They are generally of a brownish colour over a large part of their surface; the margin of the carious cavity is black, or, rather, it presents a

dark appearance. Upon the upper incisors and canines there is frequently a line of green or brownish discoloration on the labial surface of the tooth following the outline of the gum. The enamel is opaque in appearance, and brittle. This caries appears to start generally in the region of the bicuspids of either the upper or lower jaw. According to Mr. Oakley Coles, women of the lower classes appear more liable to this description of caries during and subsequent to pregnancy than those in better positions in life.

Another form of caries occasionally seen takes place on the palatine cusps of the *upper* bicuspids and molars. The dentine is soft, not much discoloured, nor is the enamel changed in appearance as in the previous case. The peculiarity of the situation of caries in these cases is somewhat interesting, and possibly is capable of explanation, because the bicuspids and molars are those teeth against which fluid would be most forcibly ejected in vomiting; and, further, that the tongue when at rest very often lies in contact with these teeth, and so the secretion of acid mucus from the side of the tongue would injuriously affect the enamel.

Another form is that to which I first referred to as "white" caries associated with the anæmic gum. The enamel, especially round the neck of the tooth, seems to have become softened; the teeth are very sensitive, especially to extreme temperatures. This softened state may be confined to a limited area, or pass quite round the neck of the tooth. There is rarely any green or brown discoloration on the incisors, and all the teeth appear liable to this process of disintegration.

Mr. Oakley Coles, who has written upon this subject (Trans. Odont. Soc.), describes a condition of a general softening of the tooth without any actual decay. The whole tooth becomes very sensitive, especially to the touch, and also sometimes to heat or cold. Later on, the tooth becomes loosened in its socket, and this loosening appears partly due to absorption of the alveolus. The tooth, when removed, shews the peridental membrane to be anæmic in appearance. The cut portion of the tooth has a soft greasy surface different to a tooth removed for an inflamed pulp or periosteum, and he terms this a state of "fatty degeneration."

This kind of "white" or "soft" caries appears more commonly to be found amongst that class of women who have the reputation of being well nourished, and in those cases where one would not expect to find such a condition. This softening might be due to a diminution in the supply of earthy salts to repair the waste of constant use, or perhaps it is a resorption of the calcareous matter of the teeth such as takes place in bones in cases of osteo-malasia. Such a condition of the teeth might be, I apprehend, due to a modification of such a process.

I know of no analysis of the teeth *before* and during or after pregnancy, but I think most dentists say there is a change in the density of the tooth structure. Wedl (Wedl Dental Pathology, page 432) says that "in a large number of cases of uterine disease the teeth are seriously affected by caries."

Neuralgia, or pain in or from the teeth.—Nerve affections in pregnancy may have a simple local peripheral origin, as would be caused by carious teeth; or it may be a reflex pain generally considered as being caused by disturbances in the uterus or from pressure in its locality, although it has been argued by some writers as being caused from the mucous membrane of the stomach rather than from the uterus, the whole alimentary tract, including the mouth, being usually in such cases in an irritable state. However, in such cases I think a careful diagnosis and examination, to arrive at the cause of trouble, is requisite; for pain in a tooth by no means indicates that that tooth is the source of trouble; it may be in another tooth, or in a part more or less remote. Morbid conditions of the uterus, whether pregnant or otherwise, especially seem a cause of pain attributed to the teeth. The relation of these parts is a condition fully recognised in the various works on midwifery and nervous diseases.

This reflex pain however appears more severe in first pregnancies. It is not so troublesome in successive pregnancies, although the teeth may be more carious. In illustration, Garrettson (Oral Surgery, page 860) relates a case where a woman complained of pain in a bicuspid tooth of the lower jaw; the pain became unbearably severe and the *tooth was carious.* It was removed without any apparent benefit. In the absence of any other reason to account for the pain a general examination was made, when it was found that the inner fundus of the uterus was ulcerated. Its treatment and cure was followed by a disappearance of pain in the region of the tooth.

Another interesting case is recorded (Amer. Syst. Dent., page 444, vol. 3) of pain in a tooth during labour. The woman was the mother of five children, nothing unusual had occurred in previous labours which were of about eight hours' duration. During this labour the pain suddenly left the back and uterus and appeared in a tooth, the pain being paroxysmal and similar in character. Chloroform relieved it only to re-appear in the uterus; when the anodyne had passed off it appeared in the tooth again and again; but pain was not felt in the two places at one time. During this no progress was made in the labour. Twelve hours passed, and the woman becoming exhausted, the tooth was removed, when the child was born in an hour.

I do not think that these and similar cases should be regarded as having altogether an hysterical origin. I think mostly where hysteria shews itself the pain has three kinds of positions. (1) It may extend to several teeth. (2) It may be fixed in two teeth which are sound, or (3) it may shift from one part to another, at times disappearing, especially if attention is directed in some other direction. Cases of this kind are often met with.

In the last place, a word or two with reference to treatment. To the constitutional remedies I will not refer beyond saying that the administration of quinine and opium appears indicated where the gums are anæmic, and where they are full Am. Cl. and Aconite might be given. Where acids are administered internally every precaution ought to be taken so that their influence is limited to the stomach and avoiding any action on the mouth. To prevent this the mouth should be rinsed with Sol. Sodæ Carb. or the medicine taken through a tube.

Chlorate of Potash and Pot. Brom. are sometimes very useful where the gums are irritable. The first is a regulator of the secretions and the bromide has a sedative action; or Borax may be applied and allowed to remain a minute or so and brushed with a soft brush, or the teeth may be brushed with equal parts of charcoal and precipitated chalk; but this preparation ought not to be used for any lengthened period. In reflex pain in a sound tooth when severe it is advised (*Lancet*, Oct. 1, 1887) to apply a blister, say 3 by 1 inch, over the fourth and fifth dorsal vertebræ.

When there is soft caries and great sensitiveness, collodion is a valuable application. Wipe over the tooth with absolute alcohol to absorb any moisture, and then paint the collodion over the whole of the tooth, which will protect the tissue against thermal changes, etc., and avoiding irritation from this source. The carious cavities, when filled, should and must be done with a filling that is non-irritating and a bad conductor. They are however, in many cases, very unsatisfactory so far as their lasting properties are concerned, and the caries cannot be stopped without *periodical examinations.* The operations, too, should be as free from fatigue and pain as is possible in these cases.

Then with regard to extraction there is often the choice to be made between allowing the tooth to remain, involving pain and compromising the general health, and its removal. It must be considered, I think, that there is a possibility of abortion or some pre-natal influence on the child, especially during the earlier months—conditions which cannot safely be ignored. This question has given rise to discussions from time to time both among obstetricians and dentists. It was brought before the Odontological Society a few years ago, and the general consensus of opinion expressed there was in favour of removal under an anæsthetic (and there is a tolerance of anæsthetics in these cases) rather than allow the patient to suffer and have her strength reduced by pain. It appears to me that most cases of this kind ought to have a careful and a special consideration at the hands of the medical attendant as well as the dentist, in order that a safe course may be pursued.

PATHOLOGICAL AND CLINICAL NOTES, WITH ESPECIAL REFERENCE TO DISEASE IN THE AGED.

BY B. FURNEAUX JORDAN, M.B.,
RESIDENT MEDICAL OFFICER AT WORKHOUSE INFIRMARY.

After having been brought for some months in close contact with disease as met with in the aged, I have been struck with one great peculiarity. It is that I have very often noticed that grave and widespread pathological lesions have been accompanied by but comparatively trifling symptoms, and that even an acute exacerbation of disease has shewn itself in some cases by slight intensification only of the general symptoms and not by acute and diagnostic phenomena. Acute disease may be more *fatal* to the aged than to those in the prime of life, but its onset is more gentle and gradual. The aged may be struck down with the iron hand, but that hand is often clothed in the velvet glove. The symptoms of fatal disease are often subdued with the subdued and lowered vitality of the patient.

This view was first of all impressed on me by a consideration of several cases of carcinoma of the œsophagus in old men. Those cases I met with in the course of *post mortem* work during the last year, and before giving a short account of them I intend to refer not only to the characteristic mentioned above, but to the general impressions which they left on my mind. Those impressions were:—

1. *The comparative frequency of œsophageal carcinoma.*—This is specially noticeable when compared with the frequency of malignant disease of other portions of the alimentary canal. Out of about 100 *post mortems* selected simply for their general interest, and made too at an institution where many afflicted with malignant disease come in to die, I met with 10 cases of œsophageal carcinoma, with 6 cases of intestinal, and with strange to say, only 1 case of rectal growth.

2. *The advanced age of the patient.*—This was another interesting feature. Between 40 and 60 years is, I believe, generally regarded as the period most prolific in malignant growths, but these patients had an average age of 68, an age when very often cancer is safely left behind.

3. *Sex.*—All the cases were of the male sex. This, I think, is in accordance with common experience.

4. *Absence, until a late period in the case, of distinctive symptoms.*—This was very striking and, as I said above, the chief point which I wish to bring out. It had one natural, though perplexing result, viz., that there was during the early period of the cases an uncertainty and haziness about the diagnosis. Symptoms of particular malignancy, localising symptoms, as *e. g.*, dysphagia, vomiting, pressure symptoms, etc.,—these were wanting as a rule for a long period, which was marked only by emaciation, cachexia, anorexia, etc., the symptoms of general malignancy. It is not too much to say that, in all probability, a proportion of deaths in old men annually ascribed to senility and bronchitis are, in reality, due to undiscovered because latent carcinoma of the œsophagus.

5. *Absence of secondary deposits in other organs.*—Only one case was complicated by deposits in other organs, and in this case (about to be given in full) the deposit, which was in the liver, was not truly secondary, that is, was not the result of distant infection *via* the lymphatics or blood vessels, but was the result of direct spreading of the growth to the cardiac end of the stomach, to the small omentum, and on to the liver.

6. *The termination of the disease.*—(*a*) Gradual death from exhaustion due to inanition. (*b*) Rapid death from some clinical accident. This occurred in three out of ten cases as follows :—

i. *Œdema of the glottis.*—A rare event in œsophageal carcinoma. I have in my possession at the present moment a beautiful specimen shewing this termination of the disease.

ii. *Rupture into the pericardium and right pleural cavity.*—I cannot find any record in the perhaps somewhat scanty literature to which I have referred of a carcinoma of the œsophagus breaking into the pericardial sac.

iii. *Rupture into the left pleural cavity.*

In mentioning the seven cases in which death was due to exhaustion, it is sufficient to note that one of them was a case of double carcinoma, one mass being at the cricoid cartilage, the other at the level of the tracheal bifurcation. How useless and misleading in that case would the passage of a tube have been!

The three cases which ended in a sudden clinical storm I will now give more in detail.

Case 1.—A man aged 50 (a young case, comparatively speaking, and one which renders the high average age all the more striking). Carcinoma of the cardiac end of the œsophagus spreading to the cardiac end of the stomach, involving the small omentum and liver, and ending by rupture into the left pleural sac, causing death by pleuro-pneumonia.

This case was the most instructive of all. Its *post mortem* was especially valuable in that it gave a simple physical explanation of the even more than usual difficulty there was in making a diagnosis early in the case. A correct diagnosis was made indeed some time before death, but before malignant growth in the œsophagus was clear and certain, there was a lengthy period during which aneurism of the abdominal aorta *had* to be kept in mind as a possible, though never a satisfactory explanation of contradictory and complicated physical signs. These at an early period pointed to abdominal aneurism, but the diagnosis was never more than tentative, and it was a relief when dysphagia and vomiting, appearing for the first time, enabled a diagnosis of malignant disease of the œsophagus, complicated however with a large mass in the small omentum, to be made.

The following is a brief history of this case:—Patient first complained twelve months before his death. His symptoms then were—(*a*) Paroxysmal gnawing pain at the epigastrium, which had no relation to the taking of food, (*b*) pulsation (never expansile) in the epigastrium, (*c*) bruit (systolic) heard over the pulsation area. Abdominal aneurism was now considered as a possible diagnosis, but in the absence of confirmatory symptoms, was not regarded as a conclusive verdict.

Two months later the following points were noted, which, if not conclusive of œsophageal carcinoma, at any rate disposed of abdominal aneurism :—(*a*) Pulsation along lower portion of abdominal aorta, probably neurotic, (*b*) absence (at this stage) of epigastric pulsation, (*c*) one inch above and to right of umbilicus a small round lump felt under the abdominal wall. This was fixed, and the abdominal wall moved over it. It gave a dull note on percussion. Over its area a systolic bruit was heard, but *no* expansile pulsation could be felt. (*d*) Rapid emaciation and a cachectic appearance, (*e*) pain on beginning to eat, "as if food stuck in his stomach."

Patient now went out of the Infirmary, to return in two months. The second period in the clinical history—the period of unmistakable carcinoma of the œsophagus—was now entered on. He complained then of—(*a*) Difficulty in swallowing food, which seemed to stick far down in his œsophagus and (*b*) vomiting about ten minutes after food, which generally relieved his pain. A small quantity of blood in the vomit.

For the next three months patient got thinner, and the epigastric pain more intense. About twenty-four hours before death intense pain set in in the left side. Pleuritic friction was heard. Collapse was marked, in which patient died.

The *post mortem* was a simple pathological explanation of complicated clinical phenomena. There was found—(*a*) Cancer of the cardiac end of the œsophagus, (*b*) a large ragged opening leading from the œsophagus into the left pleural cavity, (*c*) some traumatic pleurisy and pneumonia in neighbourhood of rupture, (*d*) spread of cancer by direct extension to cardiac end of stomach, (*e*) a large thick mass in the small omentum resting on the aorta and joining the portion at the cardiac end of the stomach, (*f*) large nodular masses in liver, some of them breaking down into cysts. What a light the *post mortem* throws on the clinically somewhat obscure case! Taking the two periods of the case, one can draw up a comparison in tabular form between the two associated clinical and pathological conditions.

Period 1. *The period of doubtful aneurism.*—Clinical—Epigastric pain and pulsation, epigastric dull note and bruit.

Pathological—Mass in the small omentum resting on the abdominal aorta.

The pain was evidently caused by pressure of mass on sympathetic aortic plexus. The systolic bruit heard was produced by local pressure on aorta and conducted by solid mass, pulsation was communicated by underlying aorta. The œsophageal cancer at that time caused no obstruction and gave rise to no characteristic symptoms and the glands were not enlarged in an accessible situation.

Period 2. *The period of undoubted malignancy of the œsophagus.*—Clinical—Dysphagia and vomiting, and finally, pain in the left side, collapse and death.

Pathological—Stenosis and ulceration of the œsophagus; and finally, rupture into the left pleural sac.

In this case then, carcinoma of the œsophagus at its cardiac extremity was latent for a long period. This latency of cancer involving that end of the œsophagus is, I find, insisted on by Fagge, who also declares that most of the cases of so-called cancer of the cardiac end of the stomach are really cases of growth originating in the œsophagus and extending down into the stomach. The growth in the œsophagus in this case was shewn by the microscope to be a scirrhus carcinoma, while the nodules in the liver were mostly encephaloid in type.

Case 2.—A man, aged 77 Death from rupture of œsophageal carcinoma into the right pleural cavity and pericardium.

Symptoms of cancer had been present for some months. Death was rapid from rupture into the two cavities above mentioned. The symptoms of general collapse, symptoms moreover not very marked, were more prominent than those of pleurisy or pericarditis. At the *post mortem* a large malignant growth was found in the œsophagus, about half an inch above the level of the diaphragm. This growth opened in front by a small ragged tear into the pericardial sac, and behind by a smooth-edged clean tear into the right pleural cavity. The pericardium contained a little turbid fluid. The heart muscle was sodden-looking on the surface, and it is probable that rupture into the pericardium had preceded by some hours the tear into the pleural sac which shewed signs of very recent pleurisy.

The symptoms of such grave lesions as the formation of communications between the œsophagus and two large serous sacs were quite inadequate, and can only be explained by the advanced age of the patient toning down the usual severe symptoms of acute fatal lesions.

I take this opportunity of noting down the fact that I cannot find any reference to cancer of the œsophagus breaking into the pericardium, so that the case is additionally interesting from its rarity.

Case 3.—Man aged 66. Carcinoma of the œsophagus opposite the cricoid cartilage, and involving the posterior wall. Death rapid from œdema glottidis.

Symptoms of general ill health. *Diagnostic symptoms for six weeks only.* At beginning of latter period patient complained of sore throat. In a few days dysphagia appeared, and he came to the Infirmary. At that time he could swallow liquids but not solids. Cough and expectoration of fœtid sputum were present. The pharynx was congested. There was marked emaciation. Carcinoma of œsophagus near the orifice of the larynx was diagnosed. Twenty-two days after admission moderate inspiratory dyspnœa set in. This was eased, but arrangements were at once made for the performance, if needed, of tracheotomy, which were justified by the fact that in the night the patient had a sudden and severe attack of dyspnœa, lasting two minutes only, and ending in his death before anything could be done.

A carcinoma was found at the *post mortem* in the posterior wall of the œsophagus opposite the cricoid cartilage. It was gradually encroaching on the anterior wall covering the back of the larynx. There was moderate stenosis of the œsophagus.

Œdema glottidis was well marked, the aryteno-epiglottidean folds being represented by two tense semi-transparent swellings which nearly met in the middle line.

Œdema of the glottis is a rare termination of malignant disease in the œsophagus. Proximity of the growth to the larynx may afford an explanation in this instance. This view is supported by another case I met with recently in which œdema glottidis had complicated cancer of the right half of the tongue and floor of the mouth, and caused sudden death.

Having now given a short account of the three cases of carcinoma of œsophagus which ended suddenly from acute lesions, I intend to conclude with a summary of one more case, which, though not one of malignant disease of the œsophagus, illustrates in the age of the patient, in the latency of the symptoms, and in the but moderate collapse which marked its violent termination, the main point that I have endeavoured in the preceding cases to point out and enforce.

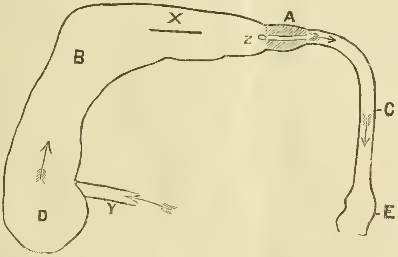
Man aged 68. Columnar carcinoma at splenic flexure of colon, obstruction of gut, with distension behind and shrinkage in front of obstructing mass. Death from rupture of distended gut.

This patient came into the Infirmary complaining of slight abdominal pain and troublesome constipation. He was well nourished, and could give a clear and intelligent account of his symptoms. Constipation had troubled him for some weeks, but beyond that he had little of which to complain. The abdomen was not distended, and no tumour could be felt on palpation. This latter fact was probably due to the presence of a large quantity of fat in the abdominal wall—a remarkable sign of the slight effect which fatal disease had in this case on the general condition of the patient. Eleven days after admission slight abdominal distension was noted and accompanied by hiccough which could only be controlled by chloral hydrate. Three days before death the distension of the abdomen increased. It was flatulent in character, and was not removed by remedies such as enemas of turpentine. Distension went on increasing, and was now localised in the right flank and epigastrium, so that chronic obstruction of the transverse colon was diagnosed. On account of the marked absence of pain and emaciation, this obstruction was not ascribed to malignant disease. Early in the day of his death the patient was more comfortable than he had been for some days. In the afternoon however of that day his friends saw him and managed to smuggle in for him oranges and buns. Of these, to judge from the *post mortem* appearances about to be described, he must have freely partaken. At 10 p.m. the same night he complained to the nurse of *slight increase* of abdominal pain, which had set in two or three hours previous to complaining. The nurse left him to prepare hot fomentations, and on returning in a few minutes to the patient, found him dead.

The *post mortem* revealed an extraordinary state of affairs. The abdomen was enormously distended with gas free in its cavity. A large quantity of liquid fæces, containing orange pips and currants, was found among the coils of the small intestines. The latter were covered with a deposit of recent lymph The cæcum and ascending colon were seen to be enormously distended, but it was not until a huge quantity of the free liquid intestinal contents had been washed away, and the large intestine removed from the body, that the real state of affairs was discovered.

The conditions found were—(*a*) A round lump about the size of a small orange, situated at the commencement of the splenic flexure, forming and obstructing the gut at that spot, (*b*) enormous distension of the colon behind the obstructing mass, (*c*) shrinkage of gut in front of the mass, (*d*) a clean tear on the posterior aspect of transverse colon, situated two inches behind the mass obstruction, one inch and a quarter in length, and longitudinal in direction. The aperture was stretched by a mass of semi-solid fæces protruding through it, and on examining its edges, it was found that the mucous lining of the gut projected slightly beyond the peritoneal covering. (*e*) A large number of secondary nodules in the liver. A probe was passed from inside the colon through the mass which obstructed the intestinal passage. This was cut down upon, and a central tunnel was found in it no bigger than a quill pen in calibre—the only passage for the intestinal contents.

Diagramatically the condition of parts can be represented like this :—



A—Cancer with narrow passage through it. **B**—Distended transverse and ascending colon. **C**—Shrunken descending colon. **D**—Caput cæcum coli. **E**—Sigmoid flexure. **X**—Tear in gut behind growth. **Y**—Small intestine. **Z**—Pip blocking cancer aperture.

What happened was clearly this :—The colon was distended behind the growth from stenosis of the intestinal canal. Hiccough was probably the result of flatulent distension. A meal of oranges and buns was taken. A pip stuck (so I read the case) in the opening of the small tunnel through the cancer (Pip represented in sketch). Acute distension and rupture of the gut followed. Peritonitis, not marked by serious distinctive symptoms, was set up and the patient died, probably from syncope the result of enormous flatulent distension of the abdomen embarrassing the cardiac action. A passage for fæces the size merely of a quill pen enables the patient to pass a tolerably comfortable existence. That passage is suddenly and totally obstructed by an orange pip, and death in a few hours is the result.

The lesson which this case does seem to enforce is, that cancer in old people can exist without either localising or general symptoms. Here we have an old man who a month before his death was not complaining at all, yet at that time he had a cancer causing marked stenosis of the colon ; who on the day of his death eat buns and oranges, yet his gut was then distended behind a very small intestinal tunnel ; who shortly before his death complained of slight increase of existing trifling abdominal pain, yet liquid fæces were then pouring in huge quantities through a large intestinal tear into his peritoneal cavity; and who finally appeared with his abdomen in that state on the *post mortem* table as a stout and well-nourished subject.

THE INGLEBY LECTURES
ON
THE CONDITION OF THE VASCULAR SYSTEM IN ANÆMIC DEBILITY.

Delivered at the Queen's College, Birmingham.

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Lecture III,

Venous Pulsation.—To understand this we must first glance at the anatomical and physiological conditions. The internal jugular vein has valves at its entrance into the subclavian, or these may be as much as three-quarters of an inch above this. The external jugular has valves both at its entrance into the subclavian and an inch and a half above the clavicle. The subclavian has valves at a point just distal to the entrance of the external jugular. All these valves are only doubtfully competent, and sometimes are absent. There is a constant pressure from the distal veins towards the heart. Owing to the resiliency of the lungs and the systolic action of the heart, the blood is attracted from the veins to the chest; this attraction is essentially a varying one, being more in inspiration and diastole than in expiration and systole ; but, though variable, it is always acting—except, perhaps, in extreme expiration with cardiac systole. Both this *vis a fronte* as well as the *vis a tergo* from the distal veins will act more strongly on the blood in the jugular veins of the right side than on those of the left as the left innominate forms a considerable angle with the superior vena cava, whereas the right is nearly in a straight line with it. Gravity will aid both these forces in the erect position. Where the jugulars enter the subclavian they have firm fascial attachments which prevent their collapse at these points; further, the internal jugulars are dilated near their openings into what is called the jugular bulb. Any slackening in the *vis a tergo* will tend to empty the vein, any slackening in the *vis a fronte* to fill it. In anæmia there is a constant lessening of the *vis a tergo*, with a corresponding constant comparative emptiness of the vein. The vein is in no way distended, the slightest force will thus increase its diameter. Hence, if there is even a small slackening in the *vis a fronte*, the blood will at once lessen the rate at which it flows through the vein, and the vein will fill up a bit, as the blood will continue to flow into it as before. This filling up of the vein shews itself to the eye as a pulsation.

The auricular systole produces such a slackening in the flow, and therefore the pulsation should be presystolic ; and Drs. Ringer and Sainsbury, in a recent paper, have stated that this is a marked diagnostic feature between venous and arterial pulsation in the neck, or the pulsation due to tricuspid regurgitation. This may be so ; but personally I have found it a most difficult difference to estimate. The veins are so flaccid that the pulsation must be considerably delayed in its transmission ; whereas the arterial impulse in the corresponding artery is almost simultaneous with the ventricular systole. It is thus very hard to say whether the pulsation is with the auricular or ventricular systole. But whatever the exact time of the pulsation itself, its cause is no doubt the auricular systole.*

Why does not this systolic slackening of the *vis a fronte* produce pulsation in health? Occasionally it does towards the end of expiration, or with unusually deep respiration when the slackening is excessive; but this, in my experience, is very rare. At the end of the superior vena cava, as it opens into the auricle, are circular bands of striped muscle extending up the vein for two-thirds of an inch; these must act as sphincters during the auricular systole. We have seen in anæmia how it is probable that the systolic contraction of the mitral orifice fails to take place; the same failure probably occurs here, hence some blood actually regurgitates back up the vein during the auricular systole, and hence the much greater frequency of the pulsation in anæmia, as the slackening thus caused must be considerable.

The pulsation is increased on lying down, or is only noticeable during recumbency. The reason of this is simple: in the erect position gravity, to a great extent, nullifies any slackening of the stream from a diminished *vis a fronte*—gravity is always acting, it is a continuous force—the *vis a tergo* is also a continuous force. We have, then, in the erect position a combined *vis a tergo*—the pressure in the distal veins *plus* gravity; that is, the *vis a tergo* is a larger force in the erect than in the supine posture; but the *vis a fronte* remains the same in amount. It bears, therefore, a smaller proportion to the total force moving the blood than in the supine position; therefore any variations in its amount will have less influence upon the blood-flow, and will therefore be less liable to produce pulsations.

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* Since this lecture was delivered Dr. James McKenzie has published a very able and exhaustive paper on Venous Pulsation, in the *Journal of Pathology and Bacteriology* for May. In it he goes far to prove, by means of tracings, that this pulsation is usually triple; that the first and smallest rise occurs during the end of the ventricular systole, and, he believes, is due to the still contracting ventricle forcing blood into the now re-filled auricle; that the second and larger occurs during the auricular systole, and is caused by the backward flow of some of the auricular blood into the superior vena cava; that the third and largest is a percussion wave due to the systole in the adjacent carotid; and that following this is a large depression in the tracing brought about by the negative pressure of the now flaccid and dilated auricle.

The Bruit de Diable.—If pressure be made with the stethoscope in the interclavicular fossa or over the course of the internal jugular vein on the right side, often (40 per cent. Landois) a continuous murmur or hum will be heard even in healthy people. In anæmia this same noise is heard when the stethoscope is placed on as lightly as possible; very often on both sides of the neck and sometimes over the external jugulars also. It is far more commonly heard in chlorosis than in other anæmic states, and the ease with which it is produced does not seem to depend entirely on the severity of the disease.

This murmur differs from all others in persisting continuously during diastole and systole without a break; but this continuity of sound, though very characteristic, is not always present; sometimes it is heard only during the diastole of the heart, or with inspiration and not expiration, or when the patient's body is erect and not when it is recumbent, or perhaps only after physical exertion. Again, it may be a distinct see-saw murmur during recumbency, and only become continuous during the erect posture. But even when occurring with diastole alone, it is not hard of diagnosis, for with a little patience it will be found to vary considerably, and at times to be audible throughout both systole and diastole. In fact there is nothing to confound it with; the murmur of aortic regurgitation is so entirely distinct in quality, and its area of audition is so different, whilst the double murmurs of aortic valvular disease and aneurysm are markedly see-saw and never continuous.

As to its cause, Dr. Ogier Ward of this city, so long ago as 1837, shewed that it arose in the veins and not in the arteries. Its exact causation is even now uncertain; its frequent occurrence tempts one to believe in its being due to some change in the nature of the blood; but that it cannot be due to any molecular variation in this fluid—which would increase friction, for example—is evident from its absence in the arteries, where the increased rapidity of the flow and greater pressure should make it far more prominent in these than in the veins. On the other hand, it cannot be due solely to any local cause, as it is heard (rarely, it is true) in the facial and crural veins, and with moderate frequency in the superior cava, subclavian, thyroid, and axillary.

The usual explanation given of its origin is that it is due to passage of the blood-stream from a narrower to a broader part of a vein, with the consequent production of a fluid vein. But there is one condition of the blood in anæmics which may favour the production of this sound; that is, its diminished quantity. In health, with a normal amount of blood, there is an average negative pressure of 0·1 millimetre of mercury in the internal jugular, according to H. Jacobson; hence, there will be a tendency to collapse of the vein walls where they are not filled with blood. In anæmia, then, with its smaller amount of blood, the veins will be less full, and therefore there will be more likelihood of collapse, or partial collapse, occurring. And it is this collapse, or partial collapse, which produces the *bruit.* It at once gives rise to a condition favourable to the origin of a fluid vein, the collapsed portion acting as a constriction—in reality it *is* a constriction caused by the external pressure of the atmosphere, this being greater than the pressure of the blood within the vein by the force represented by 0·1 mm. of mercury, and in anæmia probably more than this. The veins are never fully distended, except locally in pathological conditions, for they alone can hold more than twice as much blood as there is in the body. Any increase in the amount of blood will, therefore, more fully distend them and increase the pressure within them and lessen their liability to collapse, and *vice versa* with a diminution of the amount of blood. Such diminution occurs in anæmia; hence the liability to collapse will be increased in anæmia. This tendency will also be increased by the poor tone of anæmic vessels, and their tendency to fatty degeneration.

We should not expect to obtain this *bruit* in the intra-thoracic veins; for though the negative pressure within these is, if anything, greater, yet it is the still greater reduction in the external pressure, owing to the aspiration of the lungs and the systoles of the right heart, which produces this increase; hence one would expect the pressure inside the intra-thoracic veins to be always greater than that immediately outside them. Nor should we expect to find it so often in the veins of the left side of the neck as in those of the right, for the blood has to turn a double angle when coming from the left, and we know that this would greatly impede its flow, and therefore increase the internal pressure by damming up the blood. Again, on the right side it would occur much seldomer in the external jugular for a similar reason. In the subclavians we have one angle to be turned, and they are also partly subject to the intra-thoracic aspiration; hence we should not expect it so often in these. As we get farther from the heart the internal pressure becomes steadily in excess of that of the atmosphere, and so we should not expect collapse or its resulting *bruit*. The right internal jugular vein is therefore the one in which, apart from any local conditions, we should *par excellence* expect this *bruit*. And this is what we find clinically.

But there is also a constantly acting local condition where this vein opens into the subclavian; it forms a dilatation called the bulb, which is prevented from collapsing by its close attachment to the surrounding fascia. It is easy to understand that any small collapse of the vein distal to this will induce the *bruit*. The external jugulars have similar fixations at the points where they debouch, and hence, no doubt, one chief cause of the *bruits* in these.

Any pressure on the vein will also produce it, as, for example, the stethoscope or some permanent constriction resulting from inflammation—as occurred in a gentleman who had a blow on the neck just behind the jaw, and in whom there is now an extremely noisy *bruit de diable*.

I mentioned that when in the erect posture a murmur was continuous; it sometimes became a double murmur with recumbency. The first and usually the most prominent portion of this double murmur is found to be systolic, and the other diastolic, the time between the systolic and diastolic murmur being somewhat less than that between the diastolic and systolic. It is accounted for in this way: The quicker the flow, the louder and more constant the sound; in recumbency gravity ceases to act, and therefore the murmur is less notable. Its peculiar rhythm is thus explained: Its systolic portion is occasioned by the rapid rush of blood into the empty right auricle whilst the right ventricle is in systole; but this rapid rush ceases before the ventricular systole is over, hence a slackening of the stream occurs, for none can pass into the still contracting ventricle; hence a cessation of the murmur. The ventricle, however, almost immediately relaxes, and there is a second rush of blood, lasting up to the auricular systole, with thus a diastolic *bruit.* It is therefore easy to understand the variability in this *bruit*, from a continuous hum of almost equal intensity to a regular see-saw.

Treatment.—Here we must remember that the affections of the vascular system are always of a secondary nature. It is the primary lesion we have chiefly to treat: what is then, this primary lesion? Anæmic debility is always the result of some kind of excessive strain—*e.g.* Puberty, Acute Illness, Poor Food, Dyspepsia, Anxiety. The fundamental want, as we have seen, is power to properly assimilate nourishment in sufficient quantity for the bodily requirements. It is proteid nourishment which chiefly fails, and this we found to be taken up and metabolised to a large extent by the mucous membrane of the alimentary tract. It is, therefore, an atonicity of this membrane which lies at the bottom of anæmic debility and all its secondary troubles, and our great aim must be to increase the energy with which this performs its important duties. But while we thus endeavour to improve the energic income of our patient we shall also act most wisely if we diminish, as far as possible, the expenditure of such energy as he already enjoys, so that it may not all vanish in the current expenditure of his daily needs, but some may be retained to strengthen his constitution, may, in fact, go to the increase of his physical capital. Bearing in mind these two main lines we may consider treatment under the following heads :—

1. *Climate.*—The three climatic requisites are warmth, sunshine, absence of strong winds : the first lessens the need for metabolism, the second cheers the nervous system and quickens life—that is, it increases the metabolic power ; the third renders the muscular effort of out-door life much easier and out-door existence generally pleasanter. Such a climate enables the invalid to spend the greater portion of his waking hours out of doors, idly sauntering, sitting, or driving ; and this is a most essential part of the treatment of anæmic debility, as the patient can breathe pure air and so stimulate all the oxidising processes of his body to the utmost extent, and make the best use of the food he takes by the mouth.

A seaside residence, such as Hastings, Bournemouth, or Torquay is most suitable for the whole year round ; if for the summer only, the more bracing climate of Margate, Cromer, and Scarborough, or the Moorlands of Yorkshire may be chosen. A mountain climate is to be avoided in this as in all functional affections of the vascular system, especially if the constitution be erethic, as the rarefied air of high altitudes has a most disturbing influence on cardiac action. When erethism is well-marked, long sea-voyages or the luxurious air of the South West of England will prove of great service.

2. *Mode of Life*—*Dolce far niente* should be the motto of him who suffers from anæmic debility ; to eat lotuses in a sunny clime his greatest aim. He should go to bed with the sun and so avoid the impurities of artificial light ; but by no means should he rise with it, but rather wait till the world is well awake and revivified with warmth. The rest in bed should be of long duration, never less than eight to ten hours, and in severe cases this should extend to twelve, a light breakfast being taken before rising. A mid-day siesta—even with men of business—should always be taken after lunch, if only for half an hour. No long sustained exertion, mental or physical, should be allowed, the

sense of fatigue ever being looked on as the criterion of labour, and drowsiness always given way to. But more important still is the avoidance of any *sudden* toil and excitement With the unstable vascular system of anæmia this is a very hard thing to do, but the patient should be carefully and persistently instructed to keep his nervous system constantly warned against the surprise of a suddenly called-for physical exertion, or the even more difficult thing to be guarded against—a sudden annoyance. Of a debilitated patient is the saying especially true—forewarned is forearmed. Worry and anxiety must be constantly tabooed. I say *constantly*, for it is wonderful how we can lessen or annihilate the petty worries and anxieties of life by constantly keeping one's mind set on having nothing to do with them. It is very seldom, even in health, that they are worth giving way to; when we do attend to them is not our summing up afterwards nearly always *La jeu n'en valait pas la chandelle.* To every patient with a functionally disordered heart, it is our duty to say— and in so saying to speak with the strongest emphasis we are capable of—On no account let small worries take you by surprise; be always on your guard against them; keep your mind in this fixed attitude—"I will let nothing disturb the serenity of my life" Let us insist that trains need never be caught, chances of making money must calmly be suffered to slip by, cross words and slighting sneers must pass unheeded if contrary action should quicken the heart one iota of a beat beyond that which is pleasurable.

3. *Occupation.*—Unless the constitution be thoroughly broken down by overstrain, or the anæmia be extreme, complete idleness is unwise. But from what I have just said it is evident that exacting employment must be renounced at any cost; its continuance can only result in increased debility. The work should be out of doors, involving no heavy toil; on this point, Tucker-Wise has made the valuable observation that of the anæmic girls who came up to the great hotel on the Maloja in the Engadine, those who had to work indoors as cooks, kitchenmaids, etc., got no benefit, whilst the nursemaids who took the children out every day soon markedly improved. A middle aged patient

accustomed to a sedentary life must be very chary of undertaking out-door employment, even light labour will be to his muscular system a toil, and it will often be better for him to continue at his sedentary work, especially if he be able to live in a climate mild enough to have the windows perennially open. The agent of a small estate, or the manager of a small market garden seems to me to be the most suitable kind of occupation. But in most cases rest and change for six and twelve months is the thing needed, and will prove sufficient for the restoration of health. A summer spent on the Lake of Geneva with the succeeding winter along the Riviera would answer well.

4 *Food.*—The nature and amount of this will depend upon the condition of the digestive organs. As a rule it should be given frequently (six meals a day) in small amounts, and of plain but nutritous character, containing plenty of proteids. I think this high proportion of proteid food should also be given in pernicious anæmia, believing, as I do, that it also is a disease of defective hæmogenesis; but if you consider it one of increased hæmolysis, to be logical you must limit your proteids, as Dr. Stephen Mackenzie has pointed out, since meat diet increases the activity of the destruction of the red corpuscles.

In the debility of middle age, forced feeding is often of very great value. To carry this out successfully the patient must be confined to bed and oxidation must be kept up by massage; the massage being further of great assistance in removing neuralgic pains, which often in these cases seriously detract from the cure of the patient. In October, 1886, I saw in consultation with Messrs. Clifton and Bremner, of Leicester, a lady, whose præcordium was so tender that she shrank from the very lightest percussion and even palpation; there was further much pain down the left arm, especially in the wrist and hand. After a month of massage, this pain was quite gone, her appetite greatly improved and her previous nervous prostration changed for an attitude of bright hopefulness.

It is wise to limit the ingestion of liquids as the greater the bulk of the blood the harder the work of the heart; moreover, the blood is anæmic, so that lessening its quantity should improve its quality.

5. *Drugs.*—In chlorosis, iron is on all hands admitted to be *the* drug. It is very rarely that I do not at once begin with it, except in cases of severe gastric disturbance. When the appetite is wanting, and the stomach sensitive with atonic constipation, I order a tonic of nux vomica and soda with peppermint water and tincture of hop, adding to it, if there be much nervous upset, 10 to 15 drops of bromidia. This I give shortly before each meal, and after the meal this pill—aloes socotrinæ, gr.j; extr. belladonnæ, gr. $\frac{1}{4}$; ferri sulph., gr.j; conf. rosæ, q.s.; giving sufficient of these—one to six daily—to keep the bowels well open. So soon as the digestion has improved I add Blaud's pills, one to six a day and, when the appetite becomes good, cease to prescribe the mixture. You perceive that I adhere to the old-fashioned form of iron which is contained in Blaud's famous pill. Very rare indeed are the cases of chlorosis where I have found it ill borne; then I have met with fair success with Denaeyer's peptonate of iron or liq. ferri dialysati, which latter I remember Dr. Wade speaking well of for cases which could not stand the cruder forms. The theoretical advantage of Blaud's pill is that in it you prescribe ferrous carbonate in a nascent condition; but the Addendum to the *Pharmacopœia*, 1890, and Mr. Martindale also, state that whereas a 5-grain pill should contain a grain of ferrous carbonate, yet before it can be dried and coated, quite half of this is converted into ferric oxide. If this be so, probably before the uncoated pill is swallowed, very little carbonate remains at all; hence the desirability of coating them, and more especially of the bi-palatinoid disc which prevents the two ingredients mixing till they reach the stomach, and should, therefore, give the full proportion of nascent ferrous carbonate. In private I prescribe these bi-palatinoids, but for hospital practice they are too expensive. Dr. Mackenzie uses ferri sulph. exsiccatum with the carbonate of potassium, but Mr. Campbell, our able chemist at the Queen's Hospital, tells me that this salt is nearly always overheated in the process of drying, and an insoluble basic sulphate to some extent produced, which

evidently cannot be converted into ferrous carbonate. Whatever form of iron be employed, it must be given in large amounts; many chlorotics will take 30 or more grains of Blaud's pill daily, and will do much better on this than any less quantity; the iron should be continued, too, for two or three months after the patient feels quite well, and has recovered her proper colour.

In other forms of anæmic debility iron ceases to have this apparently specific action Its value is still undisputed, but it is only one of several other valuable agents, and in my experience, by no means the most important. In the debility of middle age and exhaustion from overstrain, it is as a rule, but badly borne, while strychnia with hydrochloric acid has far greater remedial effects. Pernicious anæmia stands rather by itself in this relation; it and chlorosis are at the two extremes of the ferruginous scale, iron having less influence over this than over any other form of anæmia. Yet if pernicious anæmia were due to the increased destruction of red corpuscles, and the consequent increased elimination of iron as a waste product from the system, surely it is here where an increased supply of iron should be particularly efficacious, as, the hæmogenetic functions of the body not being interfered with, the more iron they had the more hæmoglobin they would be able to make, so as to compensate for its increased destruction. But if the excess of waste iron be, as I have suggested, due to inability of the liver to make use of it, then it is evident that an increased supply would not prove of much benefit. First of all we must improve the iron-distributing function of the liver, and then we can hope to benefit from the administration of iron. This is what we have already found to be the best method of treatment clinically. In pernicious anæmia arsenic is recognised as our most valuable drug, especially when borne in large doses (10 to 15 minims). Now arsenic lessens the glycogenic function of the liver, and it also hinders the crystallisation of hæmoglobin—that is, it influences in an important way the properties of both the organ and the substance which are in question. It is therefore not mere vague theorising to believe that it may aid the liver in hæmogenetic labour.

We also find that the recovery of patients suffering from pernicious anæmia is hastened by the administration of iron. This, also, is what we should expect on my theory. When once the liver has been improved by arsenic, so that it can again perform its hæmogenetic function, then the case becomes one of ordinary anæmia, and iron acts as it does on this latter disease. There is now much evidence and authority in favour of the statement that pernicious anæmia is not necessarily fatal. I saw last summer, in consultation with Dr. Haig of Coventry, an old gentleman whom I was told Dr. Broadbent had previously diagnosed as suffering from pernicious anæmia. You will agree with me that no physician is to be more trusted in such a matter than Dr. Broadbent; yet when Dr. Haig and I examined the blood, it was normal as far as the corpuscles were concerned; and I have heard quite lately that the patient is much improved in general health, and quite cured of the general eczema for which I saw him.

In men, both young and middle aged, the vascular symptoms are often prominent, and produce feebleness and languor apart from any digestive trouble. In these cases nothing in my experience answers so well as the prolonged use of digitalis, the amount varying with the individual from ten to twenty or even thirty minims of the tincture taken thrice daily after meals. A sedative, such as a glass of malt liquor or of whiskey taken daily with the dinner is frequently of great service, or a drachm of the tincture of hop or thirty drops of bromidia may be added to the mixture. Sluggish bowels must be kept well opened by the pill I have spoken of when dealing with chlorosis and, when the digestive functions will stand it, Blaud's pill may be administered. If iron cannot be borne I have seen most excellent results obtained by adding quinine to the strychnia. The following are examples of the prescriptions I should advise so far as the mere drug treatment of anæmic debility is concerned.

℞ Træ. Digitalis
Træ. Nucis Vomicæ
Acid Hydrochlorici aa ♏ x.
Aquam ad ℥ j.
Sig. To be taken thrice daily after meals.

℞ Pulv. Digitalis
Quiniæ Sulphatis aa gr. j.
Extr. Nucis Vomicæ gr. ½.
Exc. q. s. ut fiat pilula una.
Sig. To be taken thrice daily after meals.

℞ Liquoris Strychniæ ♏ v.
Sodæ Bicarb. gr. v.
Træ Lupuli ʒ j.
Aquam ad ℥ j.
Sig. To be taken thrice daily before meals.

Further, I would not have you forget the efficacy of mere local mechanical treatment for the strengthening of the heart when this organ is distressing the patient with its dilatation and palpitation. Strips of belladonna plaster an inch and a half wide, of sufficient length to reach from sternum to spine, and so applied that they cross one another at an acute angle, the point of crossing being situated over the apex beat, are often a great help in quieting the heart's action. Six to eight of such strips should be applied just as one straps the chest for the pain of acute pleurisy. They should be renewed every three or four weeks, and persevered with for six or eight months.

Finally, let me advise you as to your method of procedure in prescribing for this class of patient. I usually give them three papers, one dictating their mode of life, another the arrangement, etc., of their food, and a third for the chemist. You will find them sadly lacking in the energy of perseverance; you must act the schoolmaster to them, and leave nothing to their initiation; they are too weary to follow up hints or to translate into detail a general instruction; but detailed commands they obey implicitly. Moreover, this particularising of their life enables you speedily, at their next visit, to detect any deviation from your previous prescription, and to at once bring them to book concerning it.

My opportunity is now over. To me the labour of working out these lectures has been both a pleasure and an instruction.

I can only hope that to you the delivery of them has not proved too irksome, and that you have reaped some little knowledge as a reward for your patient listening, for which I thank you most heartily.

REPORTS OF CASES.

CASES OF APPENDICITIS.

BY GILBERT BARLING, B.S., F.R.C.S.,
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At the present time, when opinion is divided as to the treatment of Appendicitis, records of cases will assist in forming a correct judgment as to the right course to pursue. The difference of opinion may be summed up thus—the physician would trust to rest in bed, emptying of the bowels and dieting for the treatment of his patients, asking for operation only when a well-defined collection of pus can be diagnosed, or sometimes in a repeatedly relapsing case. The surgeon, whilst ready to accept all this, claims that some cases call for operation before pus can be diagnosed by physical signs, œdema, etc.; and he does so on the ground that, in a certain number, left until abscess can be *diagnosed*, a septic diffused peritonitis will be started for which medical and surgical means are alike useless.

I have adopted the term appendicitis because from what I have seen clinically and in the *post mortem* room inflammation arising in and around the vermiform appendix is very generally the starting point of the mischief, but I do not mean to imply that the cæcum is never the primary seat of disease; on the contrary, I have seen specimens which leave no doubt in my mind that occasionally the cæcum is primarily at fault.

The following five cases which have been under my care during the past few months are interesting as illustrating the very varying course and termination which appendicitis may take. Three of these required operation, but it is not suggested that operative interference is required in anything like this proportion in all cases of appendicitis. As a matter of fact those cases coming into the hands of the surgeon are often such as require immediate operation for well-defined abscess or acute perforative inflammation, whilst of the milder cases he sees little.

Case 1.—*Appendicitis of moderate intensity; recovery without operation.*

Mr. M., age 30, seen in consultation with Dr. Frost, of Stechford. An anæmic dyspeptic looking man who had for years suffered from indigestion and constipation, with occasional sharp attacks of pain in the abdomen, and from vomiting after indigestible food.

Ten days before I saw him the patient had an attack of vomiting, with severe pain diffused over the abdomen. Since then he had been tender in the right iliac region, constipated, and somewhat feverish. There had been no rigor.

When first seen by me on June 29, 1891, he lay in bed on his back with his lower limbs extended, and nothing in his face to suggest illness of any severity. He was not sick, his bowels had been open after an enema, the pulse was 84, and the temperature 101·5°. The abdomen was slightly distended, with an ill-defined thickening above the outer half of Poupart's ligament, over which there was diminished resonance, whilst at two inches from the anterior superior spine of the ilium on a line drawn from the spine to the umbilicus there was a very tender spot, as is so strongly insisted upon by McBurney. The thickening above described did not fluctuate but there was a suspicion of œdema over it.

The treatment adopted was, absolute rest in the recumbent position, an enema daily to empty the bowels, careful dieting and, locally, the application of Leiter's cold coil. For the next few days there was steady improvement both locally and generally, but on July 3rd hot water was run through the coil instead of cold as the patient thought the latter caused him pain.

After July 4th the temperature was practically normal, and the thickening steadily diminished until on July 15th it had almost disappeared and the tenderness had quite passed away. The patient was allowed to get up a few days later and has since remained well.

This case is a typical example of a mild appendicitis, and is the variety most commonly met with. Such in my opinion do not call for operative interference.

Case 2.—*Gangrenous inflammation of the Appendix; diffuse septic Peritonitis; operation; death two days later.*

I saw the patient, a girl aged 14, at her own home, whence she was too ill to be removed, on Sept. 12th, 1891. She first complained of pain in the right side of the abdomen on Sept. 8th, but was not seen by her doctor until Sept. 10th. She was then vomiting and suffered from a painful and tender swelling in the right iliac fossa. Sept. 11th she was in much the same condition but the vomiting had ceased and the evening temperature was 100°. When I first saw her on Sept. 12th her temperature was 101°, pulse 135, not characteristic of peritonitis The abdomen was much distended over the lower half (this I was told had arisen since the previous evening), it was tender and resonant. There was no feeling of fluctuation, no œdema, no tumour could be palpated in the right iliac fossa. The vomiting had ceased for some hours, and the bowels had acted the night before. The patient was very restless and looked extremely ill.

From the history, the rapid pulse, the abdominal distension and tenderness, and the bad facial expression, I concluded that a septic peritonitis had started in the vermiform appendix and, under bad general surroundings, operation was immediately resorted to as the child was too ill to be removed.

An incision was made in the right semi-lunar line over the region of the appendix. The intestine, which was not adherent, was red and distended and a little brownish acrid fluid escaped. The finger passing down the inner border of the cæcum liberated two to three ounces of thin fœtid pus, and the vermiform appendix was found slightly adherent at the bottom of this collection of pus. A ligature was placed round the base of the appendix which was removed; it did not contain a concretion but part of its walls were sloughing. The area of operation was carefully cleaned, chiefly by sponging, and a drainage tube was placed *in situ*. Nutriment was administered almost entirely by the rectum.

September 13th. Patient was very restless, slightly sick, and the bowels had acted three times. Owing to the want of proper nursing the dressing had been a good deal displaced and the tube was quite out of the wound. The abdomen was less distended and the pulse was slightly improved. The drainage tube was partly replaced. The patient died the next day.

This is an example of the most intense form of inflammation commencing at the appendix. Such cases call for early operation so that a spreading and very septic peritonitis may be prevented. Once this condition has been established the chance of recovery after operation becomes greatly diminished. Fortunately this variety is not common. The unsatisfactory termination of the case was I think in some measure due to the displacement of the drainage tube.

Case 3.—*Relapsing Appendicitis; rest and counter-irritation: salines; cure.*

The patient, a boy aged 14, was admitted into the General Hospital on December 11th, 1891, complaining of sharp intermittent pain in the right iliac region. The abdomen presented no abnormal appearance but percussion revealed some dulness in the right iliac fossa, and there was here a little thickening, with marked tenderness at McBurney's point. Constipation had existed for some days.

The patient stated that two and a half years before he had suffered from pain and tenderness in the same region, the attack being ushered in by vomiting, and there was constipation also. He was in bed for five weeks at this time.

About five weeks before his admission to the hospital he was seized with vomiting and pain in the region of the cæcum. He kept his bed for fourteen days, and then being apparently well commenced to get about again, but his pain returning he came to the hospital. Under the influence of rest in bed, a morning dose of sulphate of magnesia, and occasional blisters, the thickening slowly diminished. It was not, however, until the end of nine weeks that the swelling and tenderness over the site of the appendix had disappeared. The patient was in robust health three months later.

This case illustrates one point, it is that relapse may be induced by allowing the patient to get about too early. No doubt in many cases retained secretion or a solid foreign body in the appendix is a sufficient explanation of the lighting up of a fresh inflammatory attack, even when all proper precaution as to rest has been observed. But I think the need of prolonged recumbency needs emphasizing, at all events in a first relapse where this precaution has not been observed.

Case 4.—*Appendicitis with suppuration; drainage; recovery.* A woman, aged 26, was admitted to the General Hospital, under the care of Dr. Simon, on December 2, 1891.

History.—Five weeks previously the patient was seized with a rigor and severe pain in her right side. She kept her bed with general malaise, pain in the side and an intermittently high temperature. On admission, she was in a collapsed condition with a small quick thready pulse, and with a sunken, anxious facial expression. Temp., 98·8. In the right iliac fossa and lumbar region was a hard fixed tumour the size of a small cocoa nut. Her general condition improved somewhat, and on the following day and on the fourth day after her admission her temperature was 102 in the evening, and pulse about 110. On the seventh day her temperature was normal in the evening. From thence till the day of operation, on Dec. 14th, the temperature in the evening was from 100 to 102, remitting about two degrees in the evening.

Operation.—An incision three inches long, was made at the outer margin of the right rectus over the region of the appendix and several ounces of fœtid pus were let out. The appendix could not be recognised, but no persistent search was made for it. A counter opening was made in the loin just above the crest of the ileum, and a drainage tube passed through. On the second day, temperature was normal, and remained so subsequently, the anterior incision was healed in about a fortnight, and the lumbar opening about three weeks later; but all the thickening in the iliac fossa had not disappeared until the end of January, and the patient was discharged well and fat a little later.

It appears likely that at the time of admission when the patient was so much collapsed, some existing collection of pus found sudden extension, which happily did not involve the general peritoneal cavity. It is this possibility of a small circumscribed collection of pus bursting into adjacent cavities before it can be recognised which induces some surgeons to urge operative interference early, in all cases which do not give indications of resolution.

Case 5.—*Appendicitis; suppuration; drainage; recovery.*

On March 26, 1892, I saw with Dr. Orton, of Summer Lane, a man aged 38, who gave the following history:—

On March 11th, he had severe pain in the *back* and felt so ill that he went to bed. He got up the next day, but soon had to return to bed with pain in the abdomen, and he remained in bed until transferred to hospital on March 26th. During this time the pain in the abdomen continued and the bowels acted two, three, or four times a day, but there was no vomiting or rigor. One symptom which troubled him most was severe pain during and for a short time after *micturition*, so that he deferred the act as long as he could.

When admitted on March 26th the condition was as follows:—Abdomen below umbilicus rather distended and tender, and both distension and tenderness were more marked on the right side. No tumour could be felt, but the muscles were very tense; the skin was neither red nor œdematous. Tongue dry and brown, T. 102, P. 100. Great pain at lower part of abdomen in micturition.

March 27th.—Local condition much the same, tenderness rather more acute, facial impression bad, no vomiting, bowels not open, morning T. 100·5, P. 98. Urine contained one-tenth albumen. Diagnosis—acute appendicitis, probably suppuration.

Operation on the 27th. Under anæsthesia, *a marked induration felt about McBurney's point*, not very well defined; no fluctuation made out. An incision 2½ inches long was made at the outer edge of the right rectus over the induration. Four or five ounces of fœtid pus escaped from a well-defined cavity, which extended from the cæcum to the brim of the pelvis. No gas or fæces escaped, and the appendix could not be defined. The cavity was gently irrigated and a glass drainage tube inserted.

The next day the temperature fell to normal, and so remained nearly the whole time; the pain in micturition had disappeared.

March 31st.—Steady improvement, abdominal distension gone. As there was very moderate discharge, an india-rubber tube was substituted for the glass one.

April 11th.—Tube removed, urine now free from albumen.

May 8th.—Wound healed.

The diagnosis here rested mainly on the fact that there was extreme tenderness in the right iliac fossa, at the site of the appendix, with elevation of temperature and quick pulse. Operation was resorted to partly because of the absence of resolution several days after the commencement of the attack, and partly because of the bad facial impression, a point of considerable importance in these cases. The complete absence of redness and œdema over the collection of pus, and the absence of recognisable fluctuation are points worth remarking. The painful micturition was doubtless due to the proximity of the purulent collection to the bladder, longer delay in operation would probably have allowed the collection to empty itself into that organ.

PERISCOPE.

◆

URINARY AND RENAL DISEASES.

BY ROBERT SAUNDBY, M.D., F.R.C.P.

MISCELLANEOUS KIDNEY DISEASES.

The Relation of Movable Kidney to Hydronephrosis.—Clement Lucas (*British Medical Journal*, 1891, Vol ii., p. 1343).—This very practical paper forms the basis for the following conclusions:

1. That movable kidney is a condition which during displacement may and often does lead to hydronephrotic obstruction owing to twisting of the pedicle or pressure of the organ upon its duct.

2. That to avoid such danger and to relieve the patient from pain all such cases should be treated by nephrorraphy, which is a simple and safe operation.

3. That even where hydronephrosis has already advanced, cases in which the hydronephrosis is clearly due to mobility may be cured by nephrorraphy and the remains of the organ saved from further degeneration.

On the use of Turpentine in the treatment of Renal Calculi and Gall-stones.—C. H. Ralfe (*The Lancet*, 1891, Vol. ii., p. 1271).—The author believes that turpentine really has an expulsive effect upon renal and biliary calculi, and illustrates his belief by several cases in which expulsion of the stone followed the use of this drug. He does not specify the dose, but speaks of "small doses."

Note sur un cas de gravelle phosphatique du rein gauche coïncidant avec de la gravelle urique du rein droit.—C. Graux (*Union Méd.*, 1891, No. 64).—In this case no instrument had ever been used; after an attack of right-sided renal colic a uric acid stone was passed, and after an attack of left-sided colic, a phosphatic stone. The author believes there was a lesion of the left renal pelvis giving rise to partial stagnation and to irritation of the mucous membrane, and that under the influence of this local lesion and a too severely alkaline *régime* a precipitate of phosphates took place.

Two cases of operation for symptoms simulating Renal Calculus. —Bruce Clarke (*The Lancet*, 1891, Vol. ii., p. 984).—The interest of this paper is that in both cases there was a mistaken diagnosis, the symptoms having been caused by hydronephrosis. The symptoms were chiefly pain, and in neither had hæmaturia occurred.

Antipyrin in Incontinence of Urine in Children.—Gaudez (Paris Correspondence, *The Lancet*, 1891, Vol. ii., p. 326).—It is stated that M. Gaudez has found antipyrin very successful in this troublesome affection. He uses from twenty to sixty grains in twenty-four hours, taken in divided doses every two hours, and he recommends that the treatment should be kept up for fifteen days.

A case of Raynaud's Disease with Paroxysmal Hæmoglobinuria. —A. Haig (Medical Society, *The Lancet*, 1891, Vol. ii., p. 1338). —The author related the case of a girl aged six who had forty-five attacks, forty-two having occurred in the course of fifty days. He found that there was considerable excess of uric acid in the urine just before an attack, and he attributed the condition to the uric acid dyscrasia. This led him to treat the child by salicylate of soda with an acid and some nux vomica, the result being that in the next thirty-one days she had only three attacks and none subsequently.

Oxaluria and Hæmaturia.—Francis D. Boyd (*The Lancet*, 1891, Vol. ii., p. 927).—The author relates the case of a young married woman with a rheumatic history who was seized with lumbar pain and hæmaturia, the urine depositing a quantity of oxalate of lime together with blood corpuscles and tube casts composed of blood and epithelium. He records the case as illustrating the renal irritation which may be produced by oxalates which obviously owed their presence to garden rhubarb of which she had been partaking largely for three days before the attack.

Albuminuria in Relation to Life Insurance.—R. Hingston Fox (*The Lancet*, 1891, Vol. ii., pp. 1325 and 1339).—This paper is based on 282 cases in which the urine was examined; only two were females; the average age was 32·8 years. Albumen was present in 86 or 30 per cent. The test employed was boiling the upper stratum of fluid and adding two or three drops of nitric acid. He classifies the cases under the following headings:—1, albuminuria of renal disease, eight cases; 2, permanent albuminuria, one case; 3, albuminuria of loaded urine, twenty-two cases; 4, albuminuria of unstable circulation, twenty cases; 5, toxic albuminuria, eight cases; 6, albuminuria of strain or shock, three cases; 7, vesical, urethral, and vaginal albuminuria, five cases; and 8, unexplained albuminuria, seventeen cases.

The only clinical observations which seem worth recording are some suggestions that tea tasting and seidlitz powders may cause temporary albuminuria. The facts are doubtful but are worth attention. The author considers that unexplained albuminuria in an otherwise sound individual should not be an insuperable objection to the life. In the discussion which followed Dr. Pavy avowed himself a believer in functional albuminuria, and said that the problem to be decided, by no means an easy one, was whether the albuminuria was functional or due to organic disease. Sir William Roberts spoke of physiological albuminuria and those forms which were just within that range, as after sharp exercise, a heavy meal, or a cold bath. He thought this form should find a place in such a classification as Dr. Fox had made. Mr. Clement Lucas considered that cyclical albuminuria was the same as Dr. Moxon's albuminuria of adolescence, and that the latter was right in attributing it to masturbation. Dr. Maguire recommended the use of the acidulated brine test for albumen; he divided cases of functional albuminuria into those with tension abnormally low or abnormally high. He seems to have implied that such cases were curable and when cured could be accepted.

An annotation in the *British Medical Journal* (1891, Vol. ii.,

p. 136) quotes from the writings of J. W. Brannan a case in which albuminuria was found only once out of eight examinations of the urine of an applicant for life assurance who committed suicide some months later and whose kidneys shewed commencing nephritis. The Editor of the *New York Medical Record* says that all the American Insurance Companies regard albuminuria as an insuperable obstacle because of the difficulty of discriminating between the serious and the trifling cases. Dr. Lewis, of Hartford, Conn., says that from 6 to 10 per cent. of those applying for life insurance have albuminuria, while the mortality rate both of the selected lives and the general public is only 3 per cent, so that he infers only from 30 to 40 per cent. of cases of albuminuria terminate fatally.

F. R. Collins (*Med Chronicle*, 1891, p. 331) thinks temporary albuminuria may be caused by indigestion simply, or by drinking milk to excess.

A significant fact in the diagnosis and interpretation of the albuminuria of adolescents.—Clement Dukes (*The Lancet*, 1891, Vol. ii., pp. 1327 and 1382).—The first part of this paper is taken up with a lengthy discussion of terminology and a good deal of argument against the use of the word functional, but some of those who use it do not intend to designate by it such cases as Dr. Dukes at least includes among his rather vague class of adolescent albuminuria. The significant fact which is reserved for the second part of the paper is that a certain number of boys who had to stand at early chapel fainted and were found to be suffering from albuminuria, or as Dr. Dukes puts it, the fainting "arose from" the albuminuria! The relation of the erect position to albuminuria has been well known for many years, and it is quite easy to understand that boys who faint also have temporary albuminuria. It is also easy to understand that those who really have organic kidney mischief may faint too, but as Dr. Dukes gives no microscopical characters of the urinary deposit in any case, and as in his former writings he has included under this title post-scarlatinal cases, this paper does not throw much additional light upon the albuminuria of boys of non-nephritic origin.

Some cases of Albuminuria.—Lee Dickinson and W. K. Fyffe (Clinical Soc., *The Lancet*, 1891, Vol ii., p. 1281).—In twenty cases of pneumonia "and allied conditions" the urine contained albumose; this was identical with what a few years ago was called "peptone." No true peptone was present; the biuret reaction was due to albumose only. The method employed was to remove such proteid as was coagulable by heat and then to treat with nitric acid and the biuret test. The albumoses met with were proto- and deutero-albumose, sometimes in large quantity, more than one per cent. The origin of the albumose was pus or inflammatory exudation, and probably it was formed by the pyogenic micro-organisms. Its occurrence was thought to be, *ceteris paribus*, of favourable significance. In the discussion which followed Dr. Herringham said he had demonstrated the occurrence of albumosuria in some cases of rheumatic fever.

Albuminuria in Syphilis.—Oscar V. Petersen (*Vratch*, 1891, No. 21).—Petersen had observed that out of 88 autopsies on syphilitic patients in 84 renal lesions were present, and out of 36 where death was caused by syphilis itself it had been mainly due in 7 to chronic nephritis; he therefore examined the urine of 200 consecutive syphilitic patients whom he divided into three classes—1, recent; 2, secondary; and 3, late. Out of the total number 55 had albuminuria, of whom 28 belonged to the first class, 22 to the second, and 5 to the third. But of these 55 the albuminuria was due to purulent admixture in 28, 18 of class i., 7 of class ii., and 3 of class iii. In 19 the albuminuria was transitory—class i., 7; class ii., 11; class iii., 1. In 8 it was permanent—class i., 3; class ii., 4; class iii., 1. He thinks where there is nephritis mercury rapidly affects the gums.

The presence of Urethane in Albuminous Urine.—Rademaker (*American Practitioner and News*; annotation, *The Lancet*, 1891, vol. ii., p. 139).—The author has found urethane in albuminous urine, never in normal urine; and he suggests that this substance, which is a powerful narcotic, is the cause of uræmic coma.

Relation between Albuminuria and the Renal Circulation.—V. Casarelli (*Rivista generale Italiana di Clinica Medica*, Aug. 20, 1891).—Landi discovered that he could for a time arrest albuminuria in certain cases by the application of bandages to the limbs. In two cases of cyclical albuminuria, and in a third presenting the clinical characters of nephritis with œdema of the face, the albumen disappeared or was greatly reduced while the bandages were kept applied. Moreover, the excretion of urea was markedly diminished.

Ueber Eiweiss im normalen Harn.—H. Winternitz (*Zeitschr. f. physiol. Chemie*, xv., p. 189).—The author answers this much discussed question in the negative. He examined only the urine of apparently healthy persons after filtering it. In one case he evaporated down two litres and precipitated with alcohol, but neither in the precipitate nor in the alcoholic filtrate could any albumen be detected. In another series 150 to 200 cc of urine were treated with three times their volume of alcohol, and after 24 to 48 hours the precipitate on being tested was found not to consist of albumen.

Ueber Globulinurie.—A. Csatáry (*Deutsches Arch. f. klin. Med.*, xlviii, 3 and 4, p. 358, 1891).—The author has attempted to discover whether there is any actual relation between the albumens of the blood, dropsical effusion, and urine of a case of nephritis, but insuperable difficulties have prevented his coming to any result. He hopes he may succeed in overcoming these difficulties, the chief of which is that of isolating the plasma of the blood.

Over Hemialbumosurie.—Stokvis (*Weekbl. van het Nederl. Tijdschr. voor Geneesk*, 1891, ii., No. 2).—A powerful man of 30 to 40 complained suddenly of pains and difficult movements in his upper extremities. After some weeks small tumours appeared on his frontal bone, zygoma and parietal bone, which grew and appeared to spring from the bone. The symptoms were attributed to the pressure of a similar tumour on the cervical spine. There was no trace of osteomalacia. The urine coagulated at 53 to 55° C., but on filtering this off warm the filtrate contained more albumen coagulable at a higher temperature, and when all coagulable albumen had been removed there was still albumen which could be demonstrated by brine and acetic acid or nitric acid in the cold. On boiling, the coagulated albumen dissolved to come down again on cooling. This kind of albumen is true hemi-albumose. The urine had also the peculiarity of gelatinising on adding a moderately concentrated organic or inorganic acid ; on heating this dissolved to a clear fluid but on cooling it set again.

Ueber das Verhalten der Harne bei Infectionskrankheiten gegen Benzoylchlorid.—R. Kerry and G. Kobler (*Wiener klin. Wochenschr.*, 1891, No. 29).—The authors have found that the precipitate obtained according to the data of Baumann and v. Udransky by shaking the urine with benzoyl chloride and caustic soda differs in healthy urine from that of persons suffering from acute infectious diseases. In the former the alcoholic solution of the precipitate gives with water only a slight opalescence or turbidity, while in the latter there is an opaque yellow or reddish yellow turbidity from which a crystalline precipitate often separates. This precipitate contains nitrogen, and in some cases an alkaloidal body poisonous to frogs has been separated from it.

Remarks on the toxicity of the urine as a guide to the diagnosis and treatment of disease.—M. Semmola (*Brit. Med. Journal*, 1891, Vol. ii., p. 640).—The author thinks that the clinician should supplement his analysis of the urine by injecting some of it into animals so as to determine what he calls the urotoxic coefficient. As the urotoxic coefficient diminishes or increases the patient gets better or worse, and so prognostic information may be obtained ; while in a case of severe infective pneumonia he was able to exclude cerebro-spinal meningitis as a complication by discovering that the urine when injected into a guinea-pig produced symptoms resembling those of the patient, thus proving them to be toxic.

Experimental observations on the Ammoniacal Decomposition of urine.—S. G. Shattock (Pathological Society, *Brit. Med. Journal*, 1891, Vol. ii, p. 994).—The most important point in this research was the discovery that with the organisms *pyococcus albus* and *aureus* most marked ammoniacal fermentation of the urine can be produced. These organisms are commonly present in suppuration, and thus is explained how a suppurative pyelitis or cystitis may be attended by ammoniacal decomposition of the urine without any instrument having been introduced from without.

Recherches chimiques sur l'influence de l'oxygène sur les produits azotées de l'urine.—Gustave Krafft (*Revue méd. de la Suisse romande*, ix., 5, p. 295).—The author has investigated the influence of daily inhalations of 35 litres of oxygen upon the nitrogenous material in the urine. He found that the urea was not increased nor the uric acid diminished, but that the total nitrogen was increased, the proportion of urea to total nitrogen being 86 to 100 before the experiment and 75 to 100 after it.

A case of Sarcinæ in the Urine.—George S. Middleton (*Brit. Med. Journal*, 1891, Vol. ii., p. 11).—The subject of this case was suffering from a chronic spinal affection due to injury. His urine was acid, turbid, and contained sarcinæ but no other abnormality ; the reporter could not tell whether a catheter had ever been passed, but up to the time of the patient's death there were no vesical symptoms of any kind.

Das Aräosaccharimeter, ein bequemer Apparat zur Bestimmung der Zuckermenge, sowie des specifischen Gewichtes diabetischer Harne.—J. Schutz (*Wiener med. Wochenschr.*, 1891, No. 39).—The Aräosaccharimeter consists of a flask with a long neck, which is filled with urine and then floated on water. According to the specific gravity of the urine it sinks more or less deeply in, and a scale on the neck permits the sp. gr. to be read off. The amount of sugar is determined by fermentation. The flask is sunk by the addition of yeast and ballast to zero of the scale, and then as the sugar is destroyed by fermentation it rises, and the sugar contents can be read off directly from a percentage scale.

INTESTINAL SURGERY.

BY GILBERT BARLING, B.S., F.R.C.S.

THE question how best to deal with certain cases of intestinal obstruction, and how best to unite divided or partly divided gut, is still as keenly discussed as ever. Variations in technique are constantly being produced, and are almost as soon put on one side or ignored, pretty good proof that up to the present time no one method has commended itself as so superior to its fellows that the surgical world is prepared to accept it and be thankful.

In the *New York Medical Record* for April 2, 1892, Dr. Abbe, of New York, makes an important contribution to the subject, "intestinal anastomosis and suturing." Seeing that he has himself devised a method of union by means of catgut rings his advocacy of union by suturing alone, without the use of rings, plates, or tubes of any kind, is the more valuable as he is enabled to discuss the question from practical experience of both plans. He says:—"Experimental work has shewn that the use of artificial aids in restoring the intestinal canal by anastomosis is feasible by such means as bone plates, catgut rings, segmented rubber rings, or vegetable plates Their use has largely been confined to experiments upon dogs, and their boasted advantage has been that there will be a reduction of time at operations. While not denying the utility of experiments upon dogs (for I am myself indebted largely to this work for valuable lessons), I would emphasise the contrast that exists between operative work in dogs and in the human subject, on account of the relative quality and reparative action in the two species. It is extremely easy to accomplish satisfactory recoveries in surgery of dogs' intestines by almost any method.

"Accumulating evidence of the methods applied to the human body may now be weighed by those of experience in this field. From evidence of published and unpublished cases, it can be shewn that in the hands of even competent men, using any of the artificial aids to accelerate the operation, the accidents may occur of having leakage, or suppuration, or hæmorrhage, or obstruction from plates, or irritation of the canal from so considerable a foreign body. The question of time gained during what is usually a prolonged operation, perhaps at most five or ten minutes, in the face of the uncertain advantage of bone plates, etc., is one that in my opinion is greatly outweighed by the superior advantage of having absolute security against leakage, blocking, etc., by the method of simple suturing. The technique of the latter procedure is a matter of easier accomplishment and far greater satisfaction in its results than that of the newer methods.

"There is one feature of the operation of anastomosis which has heretofore received no special attention, but which I believe to be of the very greatest moment in determining the lasting benefit of the operation, that is, the question of stenosis of the newly-made orifice. The law of cicatricial contraction, that operates so effectually in closing accidentally made fistulæ into the intestinal tract, or comparatively large ulcerations between the gall-bladder and the intestines, is here the direct antagonist of the surgeon in his endeavour to create a permanent and adequate anastomotic opening. The incised opening made for the use of Senn's plates is about one inch and a half in length, and the contraction of such an opening, sometimes with great rapidity, has in some cases rendered it entirely inadequate to its service. Not many autopsies remote from the date of operation are as yet recorded. Three of my cases of lateral anastomosis illustrate the subject admirably. In the first, done in 1888, between the ascending and transverse colon, where I had used Senn's plates, the patient dying six months after operation, the aperture, which was one inch and a half in length, had contracted to three-fourths of an inch, and was sufficient for its purpose only when laxative medicine was constantly given. In the second case, the patient dying six months after anastomosis, with catgut rings, the opening had contracted from one inch and a half down to a half-inch. In the third case, eight months after lateral anastomosis of the sigmoid by suturing, the aperture contracted from three inches to one and a half. This was perfectly competent to do the functional work of the bowel.

"These results were relatively good, but not so perfect as that which so far has been brilliantly demonstrated in two of the other cases presently to be mentioned, where lateral anastomosis by suturing around a four inch opening was done with instant and absolute functional restoration.

"I believe the future utility of lateral anastomosis lies in making openings four inches in length in the sides of adjacent bowel. This, I contend, is almost impossible with bone plates, and only to be done by very long catgut rings or vegetable plates, with less security and as much consumption of time as by suturing. The contrast is enormous between dropping back into the abdominal cavity a beautifully sutured, absolutely tight and flexible anastomosed end of intestine to any position in the abdomen which its natural surroundings demand, and the returning a huge bunch of bowel, inside which there is a pair of five-inch plates of bone or raw potato, to remain as irritating foreign bodies stimulating peristalsis, and tugging at the wound until they are softened enough to be swept on by the current, or as in one of Senn's cases, to be vomited up after dangerous retching.

"As regards time, even were it proved that a hand equally expert at each method could do that by plates a few minutes quicker, the relative advantage of the two procedures for safety still lies with suturing.

"But, as a matter of fact, I have found that to do thoroughly a lateral operation in the living subject, by either plates or rings, takes twenty or twenty-five minutes, and the same operation by simple suturing, done with the greatest nicety and perfect security, has taken me twenty minutes.

"The six cases of lateral anastomosis of bowel to bowel, as well as the gastro-enterostomy and other intestinal suturings, which I have reported (*Philadelphia Medical News*, June 1, 1889), speaks strongly in favour of the uniform use of suturing alone. The one fatal one of the six lateral cases was where I made immediate apposition of an enormously distended bowel above an obstruction to a collapsed portion below it, the patient being already in a deplorably bad condition.

"Since that and other experiences with great fæcal accumulations, I have strongly advocated the uniform practice of first creating an artificial anus, allowing a few days for recuperation, and avoiding the fæcal toxæmia, which I believe is a serious factor when the stagnant flood of fluid fæces flows freely into the unused and receptive bowel eager for absorption.

"The perfect technique of suturing will be found in the following method :—

"Bring the two surfaces that it is proposed to unite well up in the wound, and surround them by small compresses of gauze or towels or flat sponges wrung out of hot water. Have at hand a half-dozen fine cambric needles threaded with ordinary finest black embroidery silk that has been well boiled and kept in alcohol. Cut in lengths of not more than twenty-four inches and tie with a single knot at the eye of the needle, with one end cut to within two inches. Apply two parallel rows of continuous Lembert suture a quarter of an inch apart and an inch longer than the proposed cut. Leave each thread with its needle attached at the end of its row. Now open the bowel by scissors, cutting a quarter of an inch from the sutures, both rows of which are to remain on one side of the cut. Make the bowel opening four inches long. Apply clamps temporarily to several bleeding points, pinching the entire thickness of the cut edge without hesitation. Apply no ligatures. Treat the opposing bowel in the same manner. The clamps remaining *in situ*, the parts are quickly rinsed with water. Another silk suture is now started at one corner of the openings, and unites by a quick overhand the two cut edges lying next the first rows of sutures. The needle pierces both mucous and serous coats, and thus secures the bleeding vessels, from which the clamps are removed as the needle reaches them. This suturing is then continued round each free edge in turn, and all bleeding points are thus secured more quickly than by ligature. The serous surfaces around these button-holes are then rapidly secured by a continuation of the sutures first applied, the same threads being used, the one nearest the cut edge first. The united parts are again rinsed with water and dropped into the abdomen.

"In conclusion, I would reiterate my conviction: 1. That the attempt to simplify the technique of lateral anastomosis by bone plates and other devices has not improved it. 2. That lateral anastomosis properly done is eminently the safest and best method of restoring the canal in most cases. 3. That simple and thorough suturing with a fine silk continuous suture, applied after the manner detailed, is most satisfactory. 4. That in order to allow for the inevitable tendency to stenosis, an aperture four inches long should be made between bowels. 5. That scarifying opposing surfaces is entirely unnecessary to quick and solid repair."

Several cases are published with the foregoing remarks. The following are specially interesting.

"Case 1.—*Fæcal Fistula following Ovariotomy: Resection of two inches of Ileum; Lateral Anastomosis: recovery.* A girl aged 24 suffered from the following condition:—

"On examination, a fistulous opening was seen in the median laparotomy scar, less than two inches above the pubis. This admitted the index-finger to pass its entire length into the bowel. Through the opening there was a constant flow of turbid intestinal fluid, sometimes containing bile, and after eating, bringing up with it considerable portions of partly digested food. The peristalsis caused an intermittent welling out of this acrid secretion, which had digested the superficial layer of the skin of the abdomen, so as to produce a red excoriated and extremely painful surface over the entire lower abdomen. Ordinary strapping and plugging were ineffectual in holding back the fluid. This condition added misery to the patient's increasing emaciation, and led her to despair.

"The nature of the secretion left no doubt that the portion of destroyed intestine was high up in the ileum. The injury had apparently taken place during separation of adherent bowel at the former operation, and a portion had sloughed.

"A few days were allowed for the excoriation of the abdomen to heal by plugging effectually with a section of rubber ball, to the centre of which a string was attached and fastened to a roll of gauze laid on the abdomen across the fistula, while the rubber pad was slipped into the bowel and drawn tightly up against its inner surface. This method has been found most effectual in closing fæcal fistulæ temporarily. It worked well here, and in a few days the abdomen was nearly healed. One day it was tied too loosely, and peristalsis swept it quickly into the bowel, and it could not be withdrawn, until at operation it was found nearly a foot away and drawn back by the string, which was caught at the wound.

"On May 29th, 1891, laparotomy was performed, and a loop of small intestine found quite high up bound tightly to the abdominal wall around the fistula and to neighbouring intestine also. Careful dissection shewed that two-thirds of the lumen of the gut at the site of the fistula had been destroyed, and resection was the only resort to restore it. The entire mass of adherent bowel was dissected from the abdominal wall and from the bladder, to which it was intimately adherent, so that in the dissection a small opening was torn into the latter. This was immediately sewed up and tested by forcing Thiersch's solution into the bladder to prove its perfect closure.

"The matted bowels were then separated from each other. In doing so, a silk pedicle ligature was found at the site of one ovary, with some drop or two of pus about it. This was cleaned away. Two inches of the injured gut were then resected, including the fistula. Each severed end was inverted and closed by a double row of continuous fine black silk suture. The mesentery having been sufficiently divided, there was no trouble in drawing the ends past each other so as to overlap for six inches. In this position they were sutured together by a double row of continuous silk suture, and an incision four inches long made in each opposing bowel; a quick overhand, running suture of the cut edges, and the continuation of the double row of sutures about the opening completed the anastomosis. The parts were now washed with boiled water and replaced. The abdomen was closed without drainage. Primary union occurred. Convalescence was uninterrupted. The temperature remained below 100° F. A seidlitz powder was given daily after the second day. On the third a large movement occurred, repeated daily. Her appetite became enormous, and flesh was rapidly gained. She is now in perfect health and the abdominal scar is strong."

"Case 2.—*Double Intestinal Obstruction; resection of cancer of sigmoid flexure; lateral anastomosis; complete recovery.* Miss E. R., aged 41, had the following history of obstruction:—

"Ten days previously she had observed increasing constipation, and began to take physic without effect for four days, when her physician was called, who, after exhausting all expedients without more effect than emptying the lower bowel of scybala, diagnosed obstruction requiring surgical interference. She was unable to void flatus per anum, but had considerable in the intestine. She had little abdominal pain. Four days previous to her admission she had stercoraceous vomiting, as reported by her physician, which was repeated on the following day.

"Examination shewed a distended abdomen with some tympanites, though dull in the right half and across the upper abdomen. No certain indication could be found of the seat of obstruction. It was decided to explore the left ileo-hypogastric region through an incision as for inguinal colotomy, and make a temporary relief if found desirable, inasmuch as she was not in good condition to bear any extensive surgical procedure. The descending colon was empty, and the ascending and transverse colon enormously distended. The distension terminated in an abrupt rounded bowel in the left hypochondrium. Without searching for the cause of the obstruction under these difficulties, it was decided to make a temporary right inguinal colotomy and stitch the caput coli in the wound. This was done; and on the following day the caput coli was opened and a great accumulation evacuated. She made a quick convalescence; and on the ninth day a laparotomy was done on the outer side of the left rectus, at its upper part, in order to relieve the supposed obstruction of the splenic flexure of the colon found previously. On reaching the colon it was found sound and empty from the caput coli to the sigmoid flexure. Search for the cause of obstruction revealed an anomalous double meso-colon from the splenic flexure downward, a finger's-length on the outer side of the normal one, forming at its lower edge an inverted pocket into which the colon had formed a hernia, which had been spontaneously corrected after the bowel had been evacuated by colotomy. This it was thought had completely explained the former trouble, and the abdomen was closed. Subsequent efforts, however, failed to bring fæcal evacuations from the colotomy wound to the rectum, nor would coloured fluid injections find their way in the opposite direction. The distended rectum could be made to hold but a small pint. No tumour could be felt by palpation.

"The patient was again subject to search of the left iliac region through a wound on outer side of the rectus, low down. The empty descending colon was traced down to a very small knotty cylindrical stricture of malignant origin, which was found, on distending the rectum, to allow no fluid to pass. It was located twelve inches above the anus. Resection of this, and three-quarters of an inch of sound bowel on either end, with a portion of the mesentery adjacent, was done, with considerable hæmorrhage readily controlled. The ends of the divided bowel were completely closed by continuous suture, and the two free parts overlapped to their utmost, which proved to be four inches. After suturing them in position, opposing incisions were made in the bowel three inches long. These were carefully measured in view of future estimate of stenosis. The anastomosis was quickly completed and the cleansed parts dropped back. The time of the anastomosis was forty minutes; but inasmuch as the entire operation—including search, separation of old adhesions, resection, etc., with concluding closure of the abdominal wall—occupied over three hours, it makes little or no difference whether the time given to the act of uniting the bowel was thirty minutes or forty. It was in this case much more important that the union should be absolutely perfect. The use of artificial rings and plates was kept in mind throughout the operation, and several sizes and varieties were at hand, but simple suturing seemed more applicable, for the parts could not be brought out of the wound. The patient endured the operation very well. On each day she passed flatus. On the second day the colotomy wound was plugged. On the third day a large-formed movement passed per rectum, and from that day her convalescence was uninterrupted. Daily evacuations occurred either from medicine or naturally. The colotomy wound closed to a sinus which leaked a little, but was perfectly controlled by a strap.

"During the summer she got back her flesh and health, and continued to have normal movements, enjoying a happy summer in the country. Six months after operation she was in good health, but complaining of fulness in the pelvis. Examination revealed a small growth of the right ovary, the side opposite to the diseased sigmoid. In one month this had undergone a very rapid growth and was as large as a child's head, and the patient died after ovariotomy elsewhere.

"Examination of the anastomosed parts of the colon *in situ* during this operation shewed absolute freedom from cancer anywhere about that side of the abdomen, except a speck of suspicious growth, the size of a mustard seed, in the wall of the bowel, two inches above the anastomosis. The specimen, removed from the patient after death, shewed that the restoration of the lumen of the bowel was perfect. The oval aperture between the two portions was large enough to admit two fingers side by side up to the first joint, and ably demonstrated the perfect union and freedom of a proper channel produced thereby of a lateral anastomosis by suture."

"Case 3.—*Intestinal Obstruction from Incarcerated Hernia; Resection; Lateral Anastomosis; recovery.*

P—, aged thirty-five, had a traumatic hernia of the abdominal wall, just below the ribs, on the outer side of the left rectus muscle. This hernial tumour was as large as a flattened goose egg, and gave him no serious trouble. Three weeks ago he had an injury of the part by the thrust of a stick, and began to have symptoms of obstruction—loss of appetite, some vomiting, pain in the upper part of the abdomen, but not in the hernia, constipation, loss of flesh, and jaundice.

"Examination shewed a flaccid hernial mass at the site described, and some dulness of the hypochondrium.

"December 28, 1891, a median incision was made above the navel to introduce two fingers for exploration. The fingers entered a sharp-edged hernial pouch, two inches in vertical diameter at the site mentioned, to the edges of which omentum was adherent. A vertical incision was now made directly over the hernia, and a loop of small intestine found embedded by firm old adhesions in the tissues of the abdominal wall. This was with much difficulty dissected out; at its upper part it was so matted to the sharp edge of the ring that a rent occurred during its removal. Its complete removal being accomplished and sound intestine being drawn out of the abdomen, it was found that the intestine, where the rent occurred, was atrophied to a fibrous tube, the size of one's little finger, for an inch and a half, and without a mesentery to nourish it. The intestine above it was the jejunum, thickened and distended by chronic obstruction. The damaged portion, about an inch and a half, was therefore resected, and the ends of the sound gut sutured. Protecting the abdominal cavity, and drawing the two adjacent portions of sound intestine out of the abdomen, they proved to be of wholly unequal size and not adapted to end-to-end anastomosis. Their two ends were laid together and united by lateral anastomosis, after the manner followed in other cases, using sutures only of fine black silk around an incision of full four inches in each bowel. The entire anastomosis occupied thirty-six minutes, and was most satisfactory. The parts were washed in hot water and replaced, and the abdominal wounds closed without drainage. Uninterrupted convalescence occurred. The bowels were moved by enema on the third day, and afterwards by salines—the sulphate of magnesia, a drachm, repeated once or twice."

Whilst congratulating Dr. Abbe on his brilliant cases, we wish that he had described minutely how he dealt with the mesentery. Whether by incision or by folding over, and how the difficulties that it must offer are best met.

REPORTS OF SOCIETIES.

BIRMINGHAM AND MIDLAND COUNTIES BRANCH OF THE BRITISH MEDICAL ASSOCIATION.

The Annual General Meeting of the Birmingham and Midland Counties Branch of the British Medical Association was held at the Medical Institute on Thursday, June 16th, 1892.

The Ex-President, Dr. THOMAS SAVAGE, briefly introduced his successor, Dr. HOLMES JOY, of Tamworth.

The Annual Reports of the Council, Treasurer, and Pathological Section were presented, and shewed a steady increase in the strength and prosperity of the Branch; but it is to be regretted that the attendance of members at the meetings shews a tendency to diminish.

After the routine business had been disposed of, the President gave an interesting and able Address on some of the social and political relations of the profession.

The following elections were made :—As President-elect, Dr. Rickards; as Treasurer, Dr. F. W. Underhill; as Hon. Secs., Mr. Jordan Lloyd and Mr. Gilbert Barling; as Representatives in the Council of the Association, Mr. Jordan Lloyd, Dr. Saundby, and Mr. Lawson Tait; as Representative on the Parliamentary Bills Committee, Dr. S. H. Agar; as Members of the Council, Dr. Carter, Dr. Foxwell, Mr. Haslam, Mr. Bennett May, Mr. Marsh, Dr. Simon, Mr. Priestley Smith, Dr. Suckling, Mr. Langley Browne, Dr. Douglas, Mr. V. Jackson, Mr. McCarthy, Mr. Messiter, Mr. E. N. Nason, Dr. Thursfield, and Dr. E. Underhill.

In the evening the annual dinner was held at the Grand Hotel. This was in all respects a great success.

REVIEWS.

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NOTES ON PATHOLOGY.*

This little book claims to be a reliable guide to the *post mortem* room. There is distinctly room for such a book, and its object has been achieved. It is the work of a late well-known teacher, and it has been brought up to date, essential in pathology, by its editors. It is practically a crisp and lucid summary of the main facts of visceral pathology. It has one commendable innovation in that its authors have not hesitated to bridge over the gulf too often maintained between medicine and pathology by associating together, when mutually explanatory, clinical and pathological facts. The exposition of those facts is remarkably clear and lucid. One or two rather curious omissions can be detected. No mention whatever is made of pleurisy; and in the account of growths infecting the alimentary canal, carcinoma of the œsophagus is omitted. An occasional dogmatism on disputed points can also be noted. For example, in the classification of nephritis—always difficult to accomplish—we are confidently assured that the "small red kidney" can (from inflammation) become the "small white kidney." This is, to say the least of it, doubtful. We believe that the *genuine* "small red kidney" is pathologically isolated, seldom, if ever, springing from or becoming any other form. Again, a large spleen, when resulting from heart disease, is said to be diagnostic of ulcerative endocarditis. This is a gratifying opinion to hold from the point of view of simplifying the diagnosis of that somewhat obscure disease, but it is very heterodox. Finally, aortic stenosis is represented as practically always associated with regurgitation. It may be so in the *post mortem* room, but it is not in accordance with clinical experience. We have seen many cases of long-standing aortic stenosis in old people, leading quiet lives, who have never had a sign or symptom of aortic regurgitation.

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* Notes on Pathology: a Handbook for the Post Mortem Room. By the late R. E. Carrington, M.D., F.R.C.P. Edited by H. Evelyn Crook, M.D., and Guy Mackison.

Despite these points for criticism, the book is one which every student of practical pathology should possess. If a short account of simple methods of preparing tissues in the *block* form for section cutting was given, in place, let us say, of an account of the intestinal worms, the book would be even more valuable.

GUIDE TO THE ADMINISTRATION OF ANÆSTHETICS.*

THE second edition of this handy little manual is enlarged and brought up to date. Several useful hints are first given concerning the preparation of patients for any anæsthetic. As to choice of an anæsthetic for any particular case, the author advocates the employment of ether as a rule except where contraindicated. He gives a list of such contraindications. For any lengthy operations he regards it as the safest anæsthetic. Detailed instructions are given for the administration of each particular anæsthetic, and the book is illustrated by several well-executed woodcuts.

He advocates, and we think quite rightly, the use of chloroform prepared from pure alcohol in all cases where chloroform is employed. The pulse during its administration should be very carefully watched. He gives a description of the most useful means of counteracting syncope when it occurs. There is a chapter on the Relative Safety of the different anæsthetic agents, with an account of the work of the Hyderabad Commission. Lastly, there is a chapter devoted to Local Anæsthetics in which the advantages and dangers of cocaine are discussed.

The author whilst upholding his own views does not fall into the error of being too dogmatic. The book itself is an exceedingly useful and interesting little manual, and should form a valuable practical text book on the subject.

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* Guide to the Administration of Anæsthetics. By Henry Davis, M.R.C.S. Second edition. London: H. K. Lewis. 1892.

THE ESSENTIALS OF BACTERIOLOGY.*

This book of 150 pages, which pretends to be a compendium of the subject for the use of the medical student in the laboratory, is a typical boil-down of four German and two English text-books. It covers the whole of practical bacteriology, and consequently presents its information in a highly condensed form, which detracts from its usefulness and admits of many errors on the part of the student from insufficient description of some of the most important methods. The most important of all bacteriological methods—viz., that of the separation of organisms by Koch's plate cultivation—is mentioned so far as directions being given to coat the plates, but the method of working it is entirely unexplained. The description of the next important method—that of inoculation of gelatine tubes—is worse than useless, as, for some unaccountable reason, the diagram illustrating it (taken, by the way, from Woodhead and Hare) is printed upside down. This is a mistake which could only have been committed by someone entirely unacquainted with practical bacteriology, and one which, if followed, would lead to startling results.

Again, Abbe's condenser is described as a "combination of *mirrors*." The serum inspissator diagram is mistaken for and called an "incubator." Bread mash—a most important culture medium—is described in two lines. The methods of staining are also too short, while too much space is given to the description of the various organisms.

These omissions and errors seriously impair the usefulness of the book, and certainly prevent us from recommending it to students.

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* Essentials of Bacteriology. By M. V. Ball, M.D. No. 20. Saunders' Question Compends. Philadelphia: W. B. Saunders.

THE STUDENT'S HAND-BOOK OF SURGICAL OPERATIONS.*

THIS book is abridged from the author's large "Manual of Operative Surgery," and is intended for the use of students who are preparing for the final examinations. It does not pretend to deal exhaustively with the subject of operative surgery; it describes the operations which are most commonly performed. We can cordially recommend this book to all our readers, not only to students, but also to those already in practice. The directions are exceedingly clear, and no one can possibly mistake what is meant by them. The drawings are good, and are taken from the larger work. The operations in every department of surgery, except that of the eye, are described with accuracy and precision. Although he assumes an accurate knowledge of anatomy on the part of the reader, we hope that this book will be used extensively, and especially by those for whom it is primarily intended.

ON LACERATIONS OF THE PERINÆUM AND PERINEORRHAPHY.†

IN this, the third edition of Dr. Barnes' little book, he first discusses the causes and varieties of laceration of the perinæum. and briefly but clearly indicates the evil consequences that result. He then proceeds to describe the methods of repair. The old denudation methods he dismisses as discarded in favour of Lawson Tait's flap-splitting operation, which he strongly advocates. This operation, although really one of the simplest in surgery, is a most difficult one to adequately describe. It must be confessed that Dr. Barnes' description is too meagre. He illustrates it by five excellent plates. In the next edition we hope he will enter more into details, and also add one or two plates to illustrate the relation of parts after the flaps have been split and before the sutures are tied. These remarks apply specially to the operation for rupture through the sphincter ani.

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* The Student's Hand-book of Surgical Operations. By Frederick Treves, F.R.C.S., Surgeon to and Lecturer on Anatomy at the London Hospital, Member of the Board of Examiners of the Royal College of Surgeons, Examiner in Surgery at the University of Cambridge.

† On Lacerations of the Perinæum and Perineorrhaphy. By Fancourt Barnes, M.D., M.R.C.P. Third edition. London: Bale and Son. 1892.

We notice that Dr. Barnes prefers silver wire for the sutures, which he fixes by means of Aveling's shot and coil. We prefer silkworm gut, which is easier to insert, easier to remove, and is absolutely non-irritating.

So far as it goes, Dr. Barnes' book is excellent, but there is not enough of it.

PRACTICAL INTESTINAL SURGERY.*

We have already noticed the first volume of this work. In this, the second volume, the author devotes most of his space to the description of various operations on the intestines, such as intestinal anastomosis, resection of the intestines, and the operative treatment of various forms of intestinal obstruction. These are illustrated by numerous diagrams, many of which are crude and inartistic, and presumably are by the author's hand. They however serve their purpose, and shew clearly enough what they are intended to convey.

The last three chapters are given up to the discussion of gun-shot wounds of the abdomen—accidents which are sadly too common in the district where Dr. Robinson practises. Most of his results have been arrived at by experiments on dogs, and it is a very grave question as to whether we may safely apply these results to the human being.

The binding of the book is rather startling, and is more suggestive of a sensational novel than of a scientific treatise.

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* Practical Intestinal Surgery. Vol ii. By Dr. F. B. Robinson, Chicago, U.S.A. Detroit: George Davis.

ON THE DEVELOPMENT OF THE TEETH.*

Mr. Humphreys, in his little brochure on this subject, gives a very clear account of a difficult and abstruse subject. In most of the disputed points he agrees with Tomes. The description, both of the minute anatomy of the various structures and of the complex changes that take place in the formation of a tooth, would be greatly enhanced in value if it were illustrated with a few diagrams. Dr. Humphreys deserves praise for the lucid and masterly manner in which he has handled his subject.

THE DIAGNOSIS OF SYPHILIS.†

The importance to all practitioners of recognising the varied manifestations of syphilis cannot be over-estimated. Impressed by this, Dr. Barton has epitomised the various phenomena in the little book before us, arranging the facts in the form of tables. The present edition is more valuable than its predecessors, as *treatment* here receives attention, which it did not in former issues; and the present epitome is therefore a really sound guide to those who wish to have syphilis presented briefly but graphically to their notice.

New Inventions, Drugs, etc.

Improved Patent Truss for Hernia.—Messrs. Salt & Son, of Corporation Street, Birmingham, have submitted to us an improved truss of their construction. The object of this invention is to impart an increased elasticity to the surface of the pad or cushion, to lighten it, and to provide by the use of suitable material a truss presenting a perfectly smooth surface, and capable of being easily cleansed. To effect these desiderata, Messrs. Salt construct pads entirely of celluloid, a material which, when rolled in thin sheets, becomes elastic. These pads are made hollow, and in the specimen submitted to us—an ordinary inguinal truss—are of a well-formed pear shape, the material being semi-transparent and of a rich orange colour, highly polished. The back of the pad is thickened to give the necessary rigidity for its attachment to the spring, the front or convex portion which comes in contact with the body being of the material sufficiently attenuated to present a highly elastic surface. The spring is covered with a sheath of the same substance, which, being sealed at each end, effectually protects it against the action of the perspiration, presenting also a perfectly smooth surface to the body, and thus entirely doing away with the ordinary leather cover, always a deposit for dirt and infection and requiring frequent renewal. The entire surface of the appliance is thus of celluloid, and it can therefore be washed daily, and removes the necessity of a special truss for bathing purposes. Owing to the hollowness of the pad and the thinness of the coating of the spring, the truss is extremely light, and especially is the surface presented by the pad to the hernial ring smooth, elastic, and comfortable. For the above-mentioned reasons the instrument would appear to be a distinct advance in appliances for the relief of hernia. Messrs. Salt have also submitted to us an umbilical pad of similar construction, which possesses all the foregoing advantages in an equal degree with that for inguinal hernia. Messrs. Salt and Son have secured the proprietary rights by Royal Letters Patent.

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* On the Development of the Teeth. By John Humphreys, L.D.S. London: Bale and Son.

† The Diagnosis of Syphilis. By J. K. Barton, M.D., F.R.C.S.I. Third edition. Dublin: Fannin and Co.

PEPTONIC TABLOIDS.—Messrs. Burroughs, Wellcome and Co. have specially prepared a new form of Peptonic Tabloids which consist of 1½ grains each of Zymin (pure Pancreatin, Fairchild) and Lactophosphate of Lime. This forms the inner kernel of the tabloid and is coated with Keratin. The 1½ grains of pure Pepsin (Fairchild) are then overlaid on the keratin-coated tabloid. The entire tabloid is coated with pure white sugar. When the tabloid is swallowed the sugar dissolves readily in the stomach and the pepsin peels off, the keratin-coated tabloid of zymin and lactophosphate of lime remaining intact. On passing into the intestinal canal the alkaline secretion dissolves the keratin coating and the component parts of the inner tabloid assist the digestive functions of the pancreas. This idea was suggested by one or two well-known physiologists, who argued that in all probability the pancreatic ferment was destroyed by coming in contact with the gastric secretion.

Miscellany.

AMŒBA'S LOVER.

A neat bacillus, with rounded ends,
Was seen, by means of a powerful lens,
Moving with undulatory grace
Through a fashionable lymphatic space.

His graceful appearance would take with some
As he picked his teeth with a flagellum,
Tho' he flirted in a way to shock us
With every common gonococcus.

From his manners good it was revealed
That he had been through a fine culture-field ;
But his tailor's efforts were all in vain
To collect a bill for this germ's membrane.

His mind was filled one might say wholly
With thoughts of sweet Amœba Coli ;
Her mobile form, 'twas his conjecture.
Languished within the sigmoid flexure.

So, hurrying through an abscess rancid
To an artery of rapid transit,
He took, in a dépôt of congestion,
A blood-disc bound for the large intestine.

In a parlor car he chanced to see
A plasmodium malariæ.
A pretty picture she seemed to make
As she fed her spores on ague-cake.

And then he thought of the bliss in store—
Of Amœba and a baby spore !
And how they'd dwell in a saccule neat
In a calm and scybalous retreat.

But just as he reached Amœba's door
He heard a protoplasmic roar,
And there, repulsive in his might,
Was a hungry, savage phagocyte.

His mouth was large and his words profane,
So our hero drew his good ptomaine.
"Swish! snap!" went a pseudopodic jaw,
And "gulp" went a phagocytic maw.

Then his mistress saw a vacancy
Where her loved bacillus used to be;
And Amœba, with doleful shiver,
Went far away to the dismal liver.

—*Exchange.*

New Books, etc., Received.

On Contractions of the Fingers and on Hammer Toe. By WM. ADAMS, F.R.C.S. With eight plates and thirty-two wood engravings. Second edition. London: J. and A. Churchill.

Colotomy: Inguinal, Lumbar, and Transverse, for Cancer or Stricture, with Ulceration of the Large Intestine. By HERBERT W. ALLINGHAM, F.R.C.S. London: Baillière, Tindall, and Cox.

A Manual of the Dental Laboratory. By CHARLES HUNTER. London: Baillière, Tindall and Cox.

Medical Electricity: a Practical Hand-book for Students and Practitioners. By W. E. STEAVENSON, M.D., and H. LEWIS JONES, M.A., M.D. London: H. K. Lewis.

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THE

BIRMINGHAM MEDICAL REVIEW.

AUGUST, 1892.

ORIGINAL COMMUNICATIONS.

THE PATHOLOGY OF THE INNOCENT TUMOURS OF THE BLADDER.

BY GILBERT BARLING, M.B., F.R.C.S.,
SURGEON TO THE GENERAL HOSPITAL; PROFESSOR OF PATHOLOGY IN QUEEN'S COLLEGE.

PAPERS published by me (1 and 2) have dealt with the pathology of the malignant growths of the bladder at some length. In the present I propose to describe fully those tumours which may be grouped together as innocent, a brief description of which I have published. (3)

Classification.—At the outset one is met with the difficulty that although typical specimens of the various classes are easily distinguishable, yet there are some intermediate ones, which are assigned with hesitation to a definite class. Instances of this difficulty are to be found in many of the firmer (or fibro) papillomatous growths, approximating on the one side to the "villous" or fimbriated papillomas; on the other to the fibro-myomas, or to the transitional tumour of Sir H. Thompson.

The myomas, or fibro-myomas, occasionally almost merge into the sarcomas, and even in the carcinomas it is not always easy to indicate the exact designation which should be applied to any particular tumour.

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1. *Illustrated Medical News*, Vol. I.
2. *Birmingham Med. Review*, March, 1890.
3. *Birmingham Med. Review*, May, 1888.

The classification which follows therefore may not be a final one, but it appears to be the best at present attainable and which future investigation will possibly modify.

Innocent.

- Papilloma
  - Fimbriated
  - Fibro-
- Fibroma
- Fibro-Myxoma, Myxoma
- Myoma, Fibro-Myoma
- Adenoma
- Angioma
- Enchondroma
- Dermoid
- Hydatid

Malignant.

- Sarcomas
  - Round Cell
  - Spindle Cell
  - Mixed Cell
  - Alveolar
  - Lympho-
  - Myo- or Fibro-
- Carcinomas
  - Squamous Cell or Epithelioma
  - Alveolar or Encephaloid & Scirrhus

Of the total number of cases inquired into and examined, viz., 260, 141 were innocent and the remainder malignant tumours, but it is probable that this does not represent their relative frequency, and that the proportion of innocent growths is greatly exaggerated. The explanation of this no doubt is that the clinical interest of innocent tumours has led to their being described or preserved, where the malignant ones have been ignored or thrown away.

Other writers on this subject have made the most diverse statements, the discrepancy no doubt arising from the above-mentioned cause. Pousson, in his work on Tumours of the Bladder (Paris, 1884), makes the proportion—innocent tumours, 138; malignant, 67; the total being obtained by aggregating statistics from various sources; but he points out that in Fere's cases, in which the anatomical nature was stated (numbering in all 82), 55 were malignant, and the rest vaguely spoken of as villous. Further, he finds that of the specimens preserved at the Necker Hospital 9 are innocent and 9 malignant. The cases recorded by Sir Henry Thompson, of which I have cognisance, makes the proportion of innocent tumours even greater than in the already-mentioned statistics; for of 30 tumours 26 are innocent, if we include 6 described as transitional, and which are probably either inflamed fibromas or fibro-myomas. This disproportion in Thompson's cases is doubtless explained by the fact that they are mainly records of those in which operations have been performed, from the benefit of which many cases of malignant tumour would be excluded. As a last example of the difficulty one has in arriving at a correct estimate on this point, it is worthy of notice that the reports of University College Hospital for 1880 to 1885 contain details of 12 cases, of which 10 are malignant.

Amongst the innocent tumours the papilloma is by far the most common; for of a total of 141, 89 came under this category. The fibromas, fibro-myxomas, and myxomas together number 28; the other groups each only contain a very small number. Among the malignant tumours available for statistical purposes the carcinomas predominate, being 72 in number, as compared with the sarcomas, which amount to 34; but it may very well be that these numbers do not represent the actual frequency of the two kinds of growths, for many malignant tumours have in times past been called cancerous, epithelioma, or scirrhus, without any attempt to determine their exact nature, and so, many sarcomas have been overlooked; whilst of late years, interest having been aroused in them, numerous examples of sarcoma have been carefully recorded, and the commoner growth carcinoma has been passed over in silence; hence there are two sources of possible error.

PAPILLOMA.

The term villous has hitherto been commonly applied to this kind of tumour, as it offers a very ready description of its naked eye appearance, and to some extent of its histological character. It has the disadvantage however of dislocating the classification of bladder tumours from that of other systems, for instance, that of the skin; and further, it has been loosely applied, even to malignant tumours, and is to a certain extent answerable for the confusion existing between growths of very different natures.

In describing the papillomas it is necessary to adopt some sub-division which, though retaining them in the same class will yet enable us to point out some histological and general characteristics in which they differ from one another.

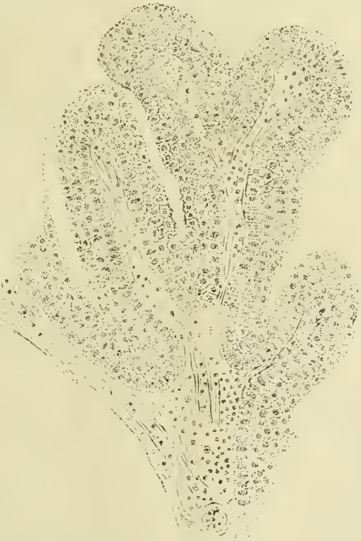
A convenient division is that suggested by Sir Henry Thompson, into fimbriated papilloma and fibro-papilloma. It must be borne in mind, however, that this separation is to a certain extent artificial, and though characteristic examples of each are easy to delineate, yet the two groups pass insensibly one into the other; and even in the same bladder, fimbriated and fibro-papilloma may exist side by side.

Fimbriated papilloma commonly arises from the surface of the bladder by a narrow base which often forms a pedicle of some length, from a quarter to half an inch or longer. This main stalk breaks up into secondary ones, and these again sub-divide perhaps more than once, the whole presenting, especially if floated out in water, a finely shaggy or "villous" appearance.

Occasionally, instead of arising by a pedicle, a number of sessile filiform processes, from a quarter to an inch in length, spring directly from the mucous membrane, forming a tuft of fine papillæ like a bunch of young grass. Examined microscopically, the pedicle, if one exists, consists of ordinary fibrous tissue, with perhaps a small admixture of involuntary muscular fibre, and bears a number of vessels with fairly developed walls.

The secondary divisions have a similar formation, but the fibrous tissue in the centre becomes less in proportion than in the primary trunk, and the vascular supply becomes more and more remarkable in extent, whilst the walls of the vessels become less substantial. Finally, each terminal papillary process consists of a column of very delicate fibrous tissue with a central blood vessel, of large size in proportion to the fibrous tissue, and with very delicate walls in which a few nuclei may be detected. Eventually the vessels look like large capillaries with scarcely any surrounding fibres. Covering each papilla are several layers of columnar or spheroidal epithelium separated from the fibrous tissue, or from the vessel walls on which it appears at times to rest directly, by a basement membrane.

The epithelium sheds extremely easily, so that great care is necessary to make successful sections, and the best method to obtain them is to imbed the growth in celloidin. If the section happens to cut transversely across some papillæ packed together, an alveolar appearance may be presented, which is suggestive of an adenomatous growth. Not infrequently there is a certain amount of small celled infiltration into the fibrous part of the tumour, especially is this likely to be the case if cystitis has been present, and it is a condition no doubt due to inflammation, the small round cells being escaped leucocytes or proliferated cells. In the microscopic drawing (No. 1) small patches of myxomatous tissue may be observed, also with a certain amount of leucocytic infiltration.



Papilloma (Fimbriated).
Microscopic drawing No. I.

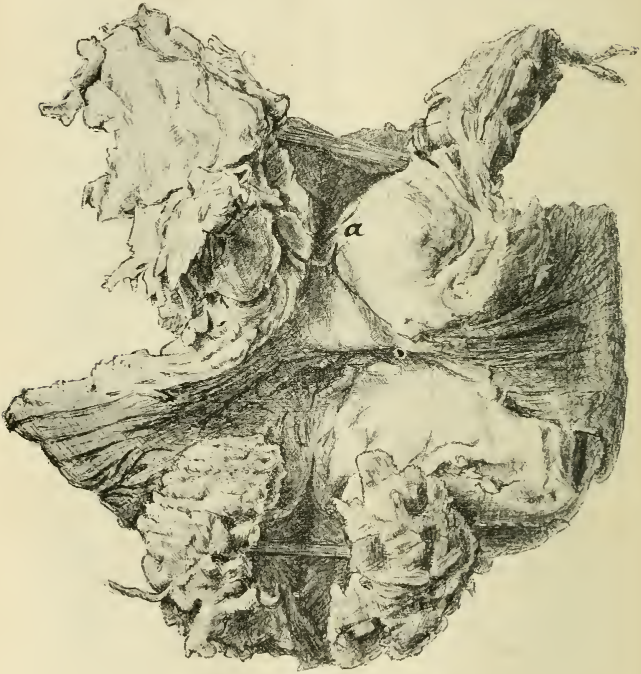
Fibro-papilloma arises either by a broad base or is quite sessile in its attachment and is altogether a more solid growth than that just described, and appears to be more intimately connected with the coats of the bladder. Springing from the surface of the solid base are papillary processes, which may or may not undergo sub-division, but they are generally shorter and coarser than the delicate papillæ of the fimbriated variety.

Examined microscopically, the base of the growth consists of a mixture of fibrous tissue and involuntary muscular fibre, the latter being considerable in amount. The blood vessels are numerous, with well developed walls. All these constituents are prolonged into the papillæ, but the muscular fibres only in small amount, and they are generally lost before the termination of the processes are reached. The fibrous tissue is also diminished and the blood vessels lose their well developed walls, and shew finally as simple capillaries, but their calibre is exaggerated in proportion to the stroma in which they lie. Clothing the whole growth are numerous layers of epithelium as found in the first variety. There is usually a certain amount of small celled infiltration into the solid part of the tumour, and to some degree this prevails also in the papillæ.

Either form of growth may be found coated with phosphates, a condition to be borne in mind, as it appears at times to have given rise to the belief, from examination by the sound, that a calculus existed. As has already been pointed out, it is difficult to take every specimen, and say this is a fimbriated, or a fibro-papilloma; indeed the same bladder may contain examples of each form, (see Anderson, *Tr. Chir. Soc.*, vol. xviii.) Further, it is worthy of remark, that after a fimbriated papilloma has been removed, if it recurs, the recurrence is not unlikely to be firmer and more solid in its character, partaking in fact of the characters of fibro-papilloma. Instances are recorded by Pitts in *Med. Press and Circular*, 1. 12. 86. and by Alexander in the *Lancet*, 17. 8. 78. and a specimen is in St. Thomas' Hospital Museum, BB. 28, 2.

With regard to the frequency of the two varieties it is not easy to speak positively, as many authors are content to record their cases simply as "villous," or "papilloma," without attempting to draw any fine distinctions. But turning to Thompson's cases, the fibro-papilloma would appear to be the commoner; although this is not borne out by examining such reports from medical literature as allow one to form a conclusion on this point. Here the result makes the fimbriated to the fibro papilloma as 12 to 10. The main and important difference between the two forms is a clinical one, and will be alluded to later on. Whichever the variety, it may exist in a single or in a multiple form, the first being rather the commoner of the two. Not unfrequently two or three distinct patches may exist, either fairly close together or on opposite walls of the bladder. (Drawings No. I. and No. II. from the Museum of Queen's College, Birmingham, illustrate the single and the double tumour.) Again, there may be one main tumour and a wide patch of sessile papillæ attached around it, or to some more distant part, giving rise to a condition like the pile of velvet. Such is a specimen (1469) in University College Hospital Museum. Instances are recorded where half a dozen or more distinct growths were found scattered over the whole interior of the bladder. Such a one is figured by Hudson in the *Dublin Journal of Medical Science*, 1879. In this instance there were eight distinct tumours attached by narrow pedicles. A similar specimen exists in the Museum of St. Thomas' Hospital, BB. 28, and in an unpublished case under Mr. Jolly at the General Hospital, there was at least a score of small papillomas, generally with short but distinct pedicles. These tumours were removed by the median perinæal operation.

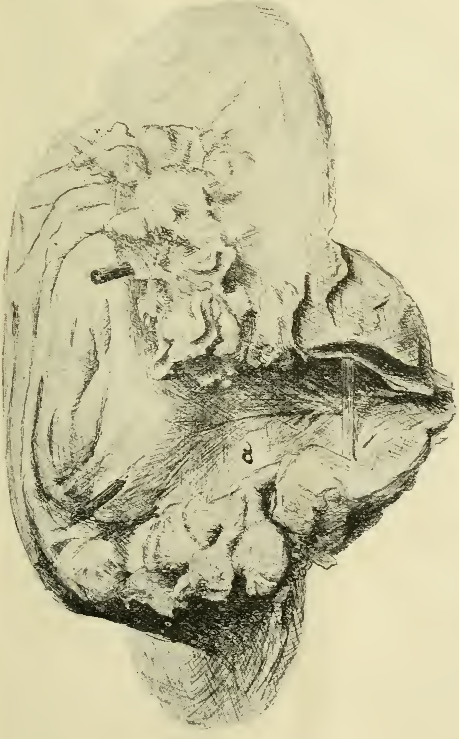
The connection of the tumour to the bladder may be either by pedicle, or by a wide base which may be described as sessile, but the commonest method of attachment is certainly by a pedicle; this however may vary in size from a number two cathether to that of the little finger. Hudson's sketch illustrates the finer kind, whilst a drawing of Bartons' case in the *Dublin Medical Journal*, 1881, and (No. 1.) from Queen's College, Birmingham, shew very well the thicker form of pedicle. Many tumours are described as being broadly pedunculated where perhaps the summit is about one and a half times as large as the base, and this merges into the sessile form which gives the idea of a solid projection of the whole bladder coats into the tumour. There is a variety of the sessile attachment to which allusion



Drawing No. I.
Papilloma in Queen's College Museum, Birmingham.

The Bladder is everted and the tumour divided vertically to shew its pedicle more distinctly. *a* marks the Urethra.

has been made when speaking of the fimbriated papilloma. Here long filiform processes arise directly from the mucous membrane, but without the intervention of firm solid out-growths. Speaking generally the fimbriated papilloma is a pedunculated growth with the exception just alluded to, whilst the fibro-papilloma tends to a sessile attachment.



Drawing No. II.

Two Papillomas in same Bladder, from Queen's College Museum, Birmingham.

Bladder everted, shewing a tumour near each Ureter. That on the right side is turned back to shew its pedicle at *a*.

The deep origin may be traced in all cases to the mucous and sub-mucous or vascular coat, and from the latter no doubt these growths derive their remarkable vascularity. In those tumours with more solid pedicles or bases a deeper source is found for the involuntary muscular fibres contained in them, viz., the delicate internal longitudinal layer of muscular fibres, or as it is called by Ellis the sub-mucous muscular coat.

The size of the growth is not appreciated properly either before removal or afterwards unless it is floated out in water, as the delicate processes shrink so, and reduce the tumour to much less than its living proportions. Amongst the largest described are one by Thompson (Suprapubic Cystotomy, 1886,) the size of an orange, and one by Yarrow (*Journal Amer. Med. Ass.*, 1886), where the size was that of half a fist. The commonest size is that of a chestnut or walnut, though several are described as of not more than half those dimensions. The favourite locality for papilloma is the base of the bladder, and if the cavity of the organ were divided into three equal portions, at least two thirds of the tumours would be found in the lowest segment, and the remainder would be about equally distributed over the middle and superior divisions Going into the matter more in detail, it is seen that the immediate neighbourhood of the ureteral orifices give rise to a very large number, for in 74 cases, 11 are described as commencing near the right ureter, 2 near the left, 9 between and around the ureters, 15 from the trigone and its vicinity. In a few instances the anterior or posterior walls were affected, and in nine cases the superior wall was the starting point. Nine times the growths were diffused practically all over the bladder, but apart from these it is occasionally noted that the base and both sides, or the anterior and the posterior walls were the parts affected. It is curious to notice that the right ureteral orifice is much more often involved than the left.

The male is very much more liable to be the subject of papilloma than the female, almost in the proportion of four to one. On this point Stein, "A study of Tumours of the Bladder, 1884," comes to a very different conclusion, as he finds that out of 30 cases collected, 16 were females, whereas in the statistics from which these remarks are compiled, 63 cases were males and 17 females. In Sir Henry Thompson's records, 14 were males and 3 females, which gives the males even a greater preponderance than four to one, and there can be little doubt that Stein was in error.

The ages of the patients suffering from this disease, at the time they came under observation, varied from 16 to 85.

The actual number in each decade was as follows:—

1 to 10	... 0	30 to 40	... 16	60 to 70	... 19
10 to 20	... 2	40 to 50	... 11	70 to 80	... 4
20 to 30	... 3	50 to 60	... 16	80 to 90	... 0

from which it appears that 60 out of a total of 72 were between the ages of 30 and 70, over which period they were pretty evenly distributed, a result which might naturally be expected, as it is during this period that the bladder is most exposed to irritation; further, the almost complete absence of the disease before adult life is remarkable.

It is convenient here to enquire what is the length of life of patients affected by papilloma of the bladder when the course of the tumour is not cut short by operation. Of 25 cases available for this purpose

5	died in	less than	1 year	after	the commencement	of symptoms
3	"	"	2 years	"	"	"
5	"	"	3	"	"	"
1	"	"	4	"	"	"
2	"	"	5	"	"	"
2	"	"	8	"	"	"
2	"	"	12	"	"	"
1	"	"	14	"	"	"
2	"	"	15	"	"	"
1	"	"	16	"	"	"
1	"	"	17	"	"	"

from which it will be gathered that sixteen, or nearly two thirds, died before the expiration of five years. The average life appears to be a little over six years. This matter will be referred to again under prognosis.

Although doubt has existed in times past as to the innocent nature of papilloma, or as it was commonly called "villous" tumour of the bladder, yet this may now be regarded as finally settled. Rokitanski described and figured "Villous Cancer" in 1852; and reference to his paper shews obviously either that he was writing of simple papilloma, which he speaks of as arising from the deep layers of the mucous or from the sub-mucous coat, or else that he was examining the papillomatous surface of a growth whose base was really malignant. Whichever may have been his material, there is nothing in his description to justify the use of the term "cancer;" but unfortunately for a long time his views were accepted. Hence, at the present time many papillomas in museums are labelled "Villous Cancer."

Another reason for error is the papillary surface found on many maglignant tumours, whether sarcomas or carcinomas, in which it occasionally happens that the surface alone being examined an incorrect diagnosis is made, and secondary growths being found, a suspicion of malignancy becomes attached to the papillomas.

These have in reality all the characteristics of innocent growths; they do not infiltrate the coats of the bladder; there is no epithelial in-growth, such as characterises the earliest stage of epithelioma; they do not give rise to secondary growths, either in the glands or in more distant parts, nor do they invade the tissues adjacent to the bladder, and they are free from the destructive ulceration which so commonly involves the malignant tumours of this as of other organs. It is true they occasionally recur after removal, but this is due to imperfect removal, and the same course would be pursued by an incompletely removed papilloma in any part of the body without justifying its condemnation as malignant.

Whilst there can be no doubt of the innocent nature then of a pure papilloma, it is necessary to investigate all tumours of the bladder more thoroughly than is often done for two reasons; one has already been alluded to—it is the frequency of papillary formation on the surface of malignant growths; the other is the tendency papilloma occasionally has to become carcinomatous, a tendency which it shares with papilloma of other parts.

The evidence on this latter point is quite conclusive in several instances, and it is a fair inference in others. A case is published by Alexander in the *Lancet*, 17. 8. 78. in which four operations were performed on the same patient, whose symptoms extended over seven years. At the first three operations the growth was undoubtedly simple papilloma, but at the last it was quite as certainly carcinoma. The microscopic examination was made, both of the innocent and malignant growths, by Mr. F. T. Paul.

Posner, in the *Berlin klin. Woch.*, 1883, describes a case in which symptoms of bladder tumour existed for nine years before death. The *post mortem* shewed a large tumour on the left side of the bladder made up of scirrhus, encephaloid, and colloid carcinoma, whilst on the right side was a small papilloma. Posner concludes that there had been conversion of a papilloma on the left side into a carcinoma, but it is possible that the earlier symptoms were due to the papilloma on the right side which still retained its innocent character, whilst the malignant growth was of much later development, and was cancerous from the first.

Barton, in the *Dub. Med. Journal*, 1881, describes a tumour of the bladder in a female, who had suffered from it for three years. At the *post mortem* examination a pedunculated growth was found which to the naked eye appeared to be a typical papilloma, and Barton's drawing would make such a conclusion appear a very justifiable one ; but near and around the insertion of the pedicle there was an ulceration, and a very careful microscopic examination by Dr. P. S. Abraham shewed evidence of carcinomatous infiltration in the pedicle and the base. There can be little doubt that a tumour originally a papilloma was undergoing malignant degeneration.

Stein (*loc. cit.*) records a case of carcinoma in which symptoms of tumour of the bladder had existed for seventeen years, and which he concludes was originally an innocent growth. A similar conclusion is almost inevitable in a case described by Thompson (*Path. Soc. Tras.*, v. 18), the specimen being preserved in the Univ. Coll. Hosp. Museum.

FIBROMA, FIBRO-MYXOMA, AND MYXOMA (?).

Included in this class are twenty-eight examples; but the histological reports of many are too incomplete to allow of their being accurately divided into two distinct divisions, though a majority probably belong to the former. There are, however, certain general distinctions to which attention will now be directed.

First of all, it would appear that the fibromas commonly occur in adult life, while the fibro-myxomas are found almost invariably in young children from the age of one year up to ten, and probably some of them are congenital. On this point Winckel's observation is interesting (Handbuch du Frauen Krank). He found two small mucous polypi, the largest the size of a pea, in the bladder of a child who died thirty-two hours after birth.

Secondly, the fibromas are single growths usually, but the fibro-myxomas are multiple, and occasionally involve parts adjacent to the bladder, as in Marsh's case, where the vagina and vesico-vaginal septum were also affected (*Path. Soc. Tr.*, v, 25).

Thirdly, whilst both forms of growth are more or less pedunculated, the fibro-myxomas generally involve a wider surface of the bladder in their origin, and often the mucous membrane around is thick and sodden to the touch and covered with small sessile projections.

In contradistinction to the papillomas, these tumours more often affect the female than the male sex. The site commonly assigned to them is about the neck, the orifice of the ureters, or the inferior wall of the bladder; but occasionally the anterior or the posterior wall is the locality to which they are attached.

I have had no opportunity of investigating a pure fibroma, for in museums they exist but very rarely, probably because they have been amenable to successful treatment for many years past and no fresh specimen has offered itself for examination. There can however be no doubt that some tumours described as fibromas, if more fully investigated, would be placed in other classes. An instance of this is specimen No. 2,419 in St. Bartholomew's Museum, and described by Mr. Savory in the *London Times and Gazette*, 1832, as a fibroma, and which is in reality an alveolar sarcoma. Mr. Birkett described and figured a fibrous polypus from a child's bladder in Vol. 41 of the *Med. Chir. Trans.*, but the microscopic examination made by Dr. Wilkes suggests that it would be better classed with the fibro-myxomas.

The best instance recorded of a fibroma appears to be a case by Gersuny in the *Arch. f. klin. Chir.*, 1872. The tumour was of the size of a hen's egg, and was attached by a very slender pedicle to the interior of a diverticulum. It is described as consisting of undulating connective tissue and some spindle-shaped cells.

A case of fibrous polypus in a female aged sixty is mentioned by Godson in the *Brit. Med. Jour.*, Vol. 1, 1879. It was attached by a narrow pedicle, and consisted of "fibro-cellular tissue with a few involuntary muscular fibres."

Another very similar to this occurred in a patient of Berkeley Hill's (*Med. Chir. Trans.*, Vol. 65). When fresh, the growth was like a mucous polypus of other surfaces, and examined by Boyd microscopically it was found to consist mostly of fibrous tissue more or less infiltrated with small cells, and in places like an alveolar sarcoma, whilst its base contained a few involuntary muscular fibres.

This much appears to be clear about the fibromas. As a rule they are single tumours taking their origin from the mucous membrane, to which they are attached by a pedicle, generally of very small size. They occur in adults, being scattered between the ages of twenty and sixty, and they have a predilection for the female rather than for the male sex. Like most other tumours of the bladder, their site is commonly from the base of the organ, especially from the vicinity of the ureters, but occasionally, as in one removed by Bazy, from the anterior wall.

The fibromas, although at times under suspicion as to their exact nature owing to the presence of a certain amount of young cell growth in them, seem to be quite innocent, for in no case recorded is there evidence of recurrence after removal.

Fibro-Myxoma, and Myxoma.—It has already been pointed out how closely these tumours trench upon the last described, mainly because sufficient care has not been taken to distinguish between them; and it is almost certain that some regarded as mucous polypi belong to the fibromas. Such an instance is specimen 3691 in the Museum of the College of Surgeons, the bladder of an adult in which is a so called mucous polypus the size of a nut, and attached by a very delicate pedicle. From the age of the patient, the tenuity of the pedicle, and the healthy condition of the adjacent mucous membrane, we cannot but surmise that it is a fibroma.

I have had the opportuaity of examining microscopically two specimens of fibro-myxoma, one in University College Hospital Museum, No. 1471 E., the other in Queen's College, Birmingham. The basis of the growth consists in each case of very delicate connective tissue which is in places interwoven in the most irregular manner, and looking, from the curliness of some of the fibres, as though it contained a certain amount of elastic tissue of unusual delicacy. In other places the connective tissue fibres run regularly side by side, and here the mucous inter-cellular tissue is most noticeable. Imbedded in the connective tissue, but more especially near the free surface, are numerous cells, round, spindle, or irregular in shape; into a few of these, delicate processes from the connective tissue may be traced, though this is exceptional, and some stellate cells, such as are seen in pure myxomas, can be found.

In the central parts of the section the blood vessels are rather numerous, and have fairly thick walls apparently of condensed fibrous tissue and without any regular muscular coat; as the vessels approach the surface they break up into numerous thin-walled capillaries which lie at a pretty regular depth from the surface of the growth, which is covered fairly evenly with epithelium, such as is found on the adjacent mucous membrane. The section from the tumour at University College Museum contains more cellular growth than the other, and in places blood corpuscles are also noticeable, both of which conditions are due probably to the irritation and partial strangulation to which a portion of the tumour was exposed from its being protruded into the urethra. Examination of the base of these tumours shews a much larger proportion of fibrous tissue and fewer cell elements.

Whether a pure myxoma has ever been found in the bladder is doubtful, although two or three have been mentioned, but without such an account of the microscopic characters as would allow of their being identified.

The fibro-myxomas arise from the mucous and sub-mucous coats of the bladder, and in the specimen in Queen's College, Birmingham, the tumours can be stripped off by a little dissection, leaving the muscular coat healthy and uninvolved. To the naked eye they present much the appearance of firm nasal polypi, or of the so-called hydatids of the chorion, and look, when full of blood, like clusters of red grapes.

There are commonly several growths, taking origin by pedicles which at the bladder surface run almost one into the other, presenting the appearance at first sight of a single multilobular tumour. The lobules vary in size from a pea to a hen's egg, the smaller ones being but slightly pedunculated, and occasionally having a rather warty appearance, as seen in a drawing of Birkett's (*Med. Chir. Trans.*, v., 41). The larger lobules are subdivided into secondary lobules, which exactly resemble those springing primarily from the mucous membrane. Often there is one main mass which has a great tendency to protrude into the urethra, a circumstance which will be alluded to later on. The mucous membrane for some distance around the tumour is thickened, and may present tiny excrescences indicating the development of more growths. The site most commonly affected is the base of the bladder or the neck, around which a circle of tumours sometimes forms, and it is not rare to find an area of some inches involved in the attachment. In a specimen (2104, 28) in Guy's Hospital Museum the growths are widely diffused. The female sex is more often affected than the male.

Fibro-myxoma occurs almost invariably in childhood—many of them indeed before the second year of life—suggesting, from the bulk then reached, that they were really congenital, an idea which is confirmed by Winckel (Handbuch der frauen krank), who found two mucous polypi, the largest the size of a pea, in the bladder of a child who died thirty-six hours after birth. One of the few cases where a myxoma developed in an adult is described by Thomson (*Brit. Med. Jour.*, 12, 3, 81). Here the patient was forty-one years of age. In some cases partial attempts have been made by ligature or scissors to remove fibro-myxomas, but they have speedily increased in size again. It cannot be argued from this that the growths were malignant, as the removal was evidently very incomplete, and in no case is there any suggestion of the bladder tumour involving other tissue or giving rise to secondary growths elsewhere. The young cell growth especially noticeable near the surface is partly inflammatory and partly an indication of peripheral growth.

(To be continued.)

ON THE DANGERS AND DISADVANTAGES OF ADMINISTERING CHLOROFORM IN THE PRESENCE OF A NAKED FLAME.*

BY CHARLES MARTIN, M.B., C.M. EDIN.

About five years ago whilst acting, in my early student days, as anæsthetist to a small provincial hospital, I was led to make some observations on the decomposition of Chloroform in the presence of a naked flame. What first drew my attention to the subject was that on certain occasions all those present in the operating room became affected with an extremely irritating cough, and that the administration of Chloroform seemed on those occasions to be fraught with more than usual danger to the patient. I noticed that the unpleasant symptoms did not arise unless the administration of Chloroform had lasted half an hour or more, or unless several operations had been performed in the same room in succession. All those present in the room displayed the following symptoms, viz: a dry irritating spasmodic cough, gradually becoming more severe; smarting of the eyes; a pungent odour, somewhat resembling that of chloride of lime, and accompanied by a stinging sensation in the nostrils; and a sense of oppression in the chest amounting to actual distress. The patient's condition at these times not infrequently caused great anxiety, and in many cases it was with difficulty that death was averted. All were not affected alike, for in some the respiration and heart failed gradually and synchronously, indicating a simultaneous weakening of both the cardiac and the respiratory mechanisms; whilst in others the respiration became embarrassed, stridulous dyspnœa became marked, but the heart's action remained unaffected at first, though later on cyanosis supervened and the pulse became weakened.

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* Paper read before the Queen's College Medical Society.

In the first group of cases the patient was saved by artificial respiration, and the administration of ammonia vapour and nitrite of amyl; in the second group of cases by the same treatment with in addition the forced extension of the neck over the end of the table to facilitate the free passage of air. It was particularly noticed how efficacious the ammonia vapour was as a means of resuscitation. Sometimes, in the early administration of the anæsthetic, an irritating spasmodic cough was produced in the patient also; but this in my experience only took place when there had been one or two previous operations in the same room that day, and when therefore there was a considerable quantity of the acrid vapour in the atmosphere of the room before that administration was commenced.

On several occasions the window was opened to admit pure air, and, as the air from without mixed with the vapour-laden atmosphere of the room, a distinct haze or mist was produced.

These events demanded some explanation, and in attempting to arrive at one, various causes were from time to time assigned. At one time it was thought that the carbolic acid used in the steam spray was impure. This was disproved by the occurrence of all the symptoms in cases where the spray was not used at all. It was then suggested that the Chloroform was impure, and had partially decomposed, previous to use, into various chlorine compounds. But on washing it no such compounds were dissolved out, and the washed-pure Chloroform when again used produced the same effects.

It was then in the spring of the year, and it was noticed that the symptoms never occurred unless the day was sufficiently cold to demand the use of a large gas stove which had recently been erected in the room. Therefore it was thought they might be due to the escape of the fumes of partially burnt gas from the stove. This explanation was shown to be insufficient by my sitting in the room for several hours, at a time when Chloroform was not being administered, and, although the stove was lit, no coughing was produced. Still, however, the stove was suspected to be at any rate a factor in its causation, and therefore measures were taken to heat the room by means of hot water pipes. The stove was discontinued and for months we were free from trouble.

An operation, however, had to be performed in an urgent case late one night, and we were once more attacked by our old enemy. The stove could not be to blame for it was not lit, but the room was brilliantly lighted by a large fan of gas jets just above the operating table. I was then led to suspect that the Chloroform underwent some decomposition produced by its contact in the one case with the flame ot the gas stove, in the other with that of the numerous gas jets; and this I became convinced was the correct explanation.

I may remark that all those present in the room on going out into the fresh air experienced a pungent limey taste in the mouth, and the acrid odour became intensified. This after-taste and odour remained for many hours. The after-effects observed in the patient were mainly those of bronchial irritation, sometimes amounting to bronchitis and more rarely to bronchopneumonia.

The chemical change which I believe takes place is that two molecules of Chloroform combine in the presence of the flame with one molecule of Carbonic Anhydride and one of Oxygen, and produce three molecules of Carbonyl Chloride and one of water.

$$2\,CHCl_3 + CO_2 + O_2 = 3\,COCl_2 + H_2O.$$

But Carbonyl Chloride is an unstable body, and a second reaction takes place by means of which one of the molecules of Carbonyl Chloride is decomposed by one of water, and produces as a result two molecules of Hydrochloric Acid and one of Carbonic Anhydride.

$$COCl_2 + H_2O = 2\,HCl + CO_2.$$

So that the two original molecules of Chloroform yield two molecules of Carbonyl Chloride, and two molecules of Hydrochloric Acid. The remaining molecules of Carbonyl Chloride also, I believe, break up into Hydrochloric Acid and Carbonic Anhydride by uniting with the watery vapour in the atmosphere

So that the final result is, that for every two molecules of Chloroform that are decomposed, six molecules of Hydrochloric Acid may be formed.

$$2\,CHCl_3 + CO_2 + O_2 + 2\,H_2O = 6\,HCl + 3\,CO_2.$$

And I believe it is the presence of this Hydrochloric Acid gas becoming more and more concentrated on the mucous membranes, by being absorbed by the moisture covering them, that produces the irritating cough, the acrid odour, and the other unpleasant symptoms described. Herein, perhaps, lies an explanation of the fact that ammonia vapour is of such value as a restorative.

In the much discussed question of Chloroform *v.* Ether, one argument much used in favour of Chloroform was that it was safer to administer in the presence of a naked flame, because Ether vapour was so highly inflammable and Chloroform vapour was not, and it has been urged that Chloroform but rarely tends to cause bronchitis. But in the presence of a naked flame, Chloroform has special dangers at the time as now shown, and the after-effect bronchitis no rarity.

These difficulties have only once, so far as I know, been referred to in this country, and that was by Dr. Paterson of Cardiff in a paper on this subject published in the Practitioner for June, 1889.

Abroad, Professor Zweifel records cases of somewhat similar difficulty arising in rooms illuminated by oil lamps, showing that it is no peculiarity of a gas flame, but that the only essentials are the presence of Chloroform vapour in the atmosphere which feeds a naked flame.

The conclusion that I would draw from these observations is that an ideal operating room should be one heated by hotwater pipes or an open grate, and lighted by means of the electric light, or some other mode not involving the presence of a naked flame, or, if a naked gas flame must be used, the room should be as large as possible and the ventilation free in order to dilute the products of decomposition.

The following are notes of some simple experiments confirmatory of the above statements :—

1. Blow Chloroform vapour through the flame of a spirit lamp—(*a*) a pungent odour ; (*b*) a white cloud around the neck of an unstoppered bottle of *Liquor Ammoniæ* exposed in the neighbourhood of the spirit lamp. This cloud is Chloride of Ammonium. ($NH_3 + HCl = NH_4Cl$.)

2. Blow Chloroform vapour through the flame of a spirit lamp against moist blue litmus paper—the litmus paper turns red, showing the presence of an acid.

3. Blow Chloroform vapour through the flame of a spirit lamp against moist starch-iodide paper—a negative result, no blue reaction and therefore no free Chlorine.

4. Finally, blow Chloroform vapour through the flame of a spirit lamp against a plug of cotton wool moistened with distilled water—pungent fumes arising from the cotton wool, and the water expressed from the wool gives powerful acid reaction, and a white precipitate when added to a solution of Nitrate of silver. This precipitate gives all the reactions of Chloride of silver.

In addition, however, in order to shew that the conditions in these experiments fairly represent what takes place in the gas flame, let anyone who has administered Chloroform in the presence of a naked flame hold a piece of moist blue litmus paper for a few seconds over the flame immediately after the operation, and it will be found to turn red. This will not occur except when Chloroform vapour has been set free in the room.

These few experiments are, I think, sufficient to show that Chloroform in the presence of a naked flame decomposes with the formation of a large quantity of free Hydrochloric Acid.

REPORTS OF CASES.

A CASE OF HYPOPLASIA OF THE LEFT AURICLE.

BY ROBERT M. SIMON, M.D.,
PHYSICIAN TO THE GENERAL HOSPITAL; AND
J. R. RATCLIFFE, M.B.,
PATHOLOGIST TO THE GENERAL HOSPITAL.

MINNIE D., a well developed girl of 15, was admitted under the charge of Dr. Simon into the General Hospital, on October 20, 1891. Her limbs, face, and body were swollen, and her breathing was laboured, especially on exertion. Her face was somewhat cyanosed, and the lips bluish, but when lying quietly in bed there was no appearance or complaint of breathlessness.

It appeared on enquiry that until she was 12 years old, she had enjoyed her life thoroughly, taking part freely in the outdoor games of her school fellows, and had been looked upon as a vigorous healthy child. At this time, and at intervals, until the time of admission, she had slight epileptic seizures, and began to get out of breath easily on exertion.

She was not considered ill enough to need medical advice, and despite occasional fits went on comfortably until Oct. 5th, when she had a very severe fit, and suffered much from breathlessness on recovering from it. On Oct. 7th, she complained of her boots being tight, and during the week prior to admission, her body began to swell. She had had no acute illness since infancy, and had never menstruated.

On examination, there was found to be very slight bronchitis, marked evidence of pleuritic effusion at the right base, and slight albuminuria. Otherwise, with the exception of the heart, the viscera were normal. There was general anasarca, but the right arm and right side of the face were enormously swollen. This was found to be due to plugging of the subclavian and jugular veins on that side; there being a difference of 2 inches in the measurements in the right and left arms below the elbow.

The cardiac dulness was very much increased, extending from the right border of the sternum into the left anterior axillary line, and extending upwards to the second rib. The apex beat was to be seen and felt in the fourth inter-space to the left of the nipple line. At this time there was a systolic murmur to be heard over the apex beat, and conducted into the axilla. The second sound at the base was reduplicated and over the pulmonary area was very loud and clanging. The pulse was 120, small and irregular.

The præcordial dulness simulated pericardial effusion, and this diagnosis was made, in addition to one of congenital disease of the heart. What form of heart lesion was present could not be determined, though the absence of bruits at the base made it improbable there was any communication between the two auricles. The delayed appearance of symptoms, until the developmental period began, made it appear probable that the heart power was inadequate, and not that there was necessarily any valvular lesion, while the character of the second sound suggested that there was probably some dilatation of the pulmonary artery.

She was kept quietly in bed, was fed on milk, and sulphate of magnesia in large doses administered. In a week she was much better, and the right arm reduced in size.

Twelve days after admission, the dulness at the right base was disappearing, the air entered the right lung well, and the general anasarca was nearly gone. The cardiac condition remained in *statu quo* with the exception of the apex beat being lowered, and the bruit at the apex being audible on rare occasions only.

On November 18th, the pericardial effusion was said to be diminished.

She improved gradually, took ordinary diet, sat up, and beyond the cyanotic appearance of the face looked well.

On January 8th, she was transferred to the Jaffray Hospital, and remained fairly well until Feb. 13th, when she began to vomit.

From this date until her death, on Feb. 27th, she suffered greatly from increasing dyspnœa, and the effects of increasing anasarca. She vomited continually and suffered much from headache, dying finally in great distress.

PATHOLOGICAL REPORT.

Heart.—Weight, 9½ ozs., was enlarged, the apex being in the anterior axillary line about two inches below the left nipple. The upper border of the heart was at the level of the lower border of the second left costal cartilage. Circumference of the left ventricle 4½ inches, and of the right 7 inches

The right auricle had a capacity of 215 cc.; it was thus very markedly dilated and was also slightly hypertrophied. The inter-auricular septum was complete. The right internal jugular vein and the right subclavian vein were thrombosed for about one inch above their junction, and the right innominate vein for about one inch below. The clot was firmly organised and the vessels were simply fibrous cords.

The right ventricle was markedly hypertrophied and dilated, holding 150 cc. of fluid. The tricuspid valve had a cone diameter of 1·75 inches (normal about 1·5) and was healthy. The pulmonary valve was normal and the cone diameter of it 1·1 inch (normal about 1·1). The inter-ventricular septum was normal.

The left auricle was *very* small, only holding 35 cc. of fluid. The walls were about $\frac{1}{16}$ inch thick. Three pulmonary veins open into it, the diameters of two being $\frac{3}{8}$ inch and the other $\frac{1}{4}$ inch. The auricle seemed to have undergone an arrest of development at some time and to have caused the secondary changes in the organs.

The left ventricle was small and the walls not hypertrophied. The mitral and aortic valves were quite healthy. Cone diameters—aortic, ·6 inch (normal ·9); mitral, 1 inch (normal 1·2).

The arteries throughout the body were much narrower than usual. The right common carotid was less than $\frac{1}{4}$ inch diameter. The common femorals were both equally small.

Diameters of chief arteries—left and right carotid, $\frac{1}{4}$ inch; left and right subclavian, less than $\frac{1}{4}$ inch; aorta, one inch past giving off of left subclavian, outside diameter $\frac{1}{2}$ inch; right renal artery, about $\frac{3}{16}$ inch; left renal arteries (there are two), each less than $\frac{1}{8}$ inch; aorta at bifurcation, $\frac{6}{16}$ inch; common iliacs, $\frac{5}{16}$ inch; common femoral, $\frac{3}{16}$ inch.

Lungs.—Each pleural cavity contained between two and three pints of fluid, and the lungs were compressed so as to be almost airless. They were markedly congested and œdematous. Nothing else abnormal. The pulmonary arteries and veins in the lung seemed to be about normal size.

Liver.—Shewed ordinary marked nutmeg Otherwise nothing abnormal.

Kidneys.—Normal, but slightly congested.

This case, then, seems to be one of retarded development of the left side of the heart, especially affecting the auricle; and of the arterial system. From the previous notes it will be seen how extremely small the left auricle was, having a capacity of only 35 cc., or not much larger than a good-sized walnut. On careful consideration of the case, one is forced to the conclusion that this is probably the primary condition, and that the ventricle and arterial system owed their smallness partly to the same cause as that which affected the auricle and partly to the smallness of the auricle itself. The changes in the right side could be accounted for by the condition of the left auricle, for it would act much in the same way as a stenosis of the mitral valve would. The right ventricle experiencing the resistance in the lungs would hypertrophy and then dilate, causing an incompetency of the tricuspid valve, and this would then account for the very marked dilatation of the right auricle. There would be brought about a condition of stagnation on the right side and of anæmia on the left, accounting on the one hand for the thrombosis of the internal jugular and cyanosis, and on the other for the fainting fits from which the girl suffered.

As to the cause, it seems impossible to indicate any with certainty. Virchow has shewn (Web. d. Chlorose, etc.), that in cases of anæmia that there is frequently under-development of the heart and blood vessels, and he has given this condition as one of the probable causes of anæmia. It is possible that this case may have a similar origin; at all events it seems as if the arterial system, when the girl had begun to develop, which she did with great rapidity; had not undergone corresponding development.

Again, it is possible that there may have been some congenital mal-development of the left auricle as a primary cause, and that the arterial narrowness was secondary, and that the symptoms did not shew themselves until puberty when an extra blood supply was wanted.

Another possible cause which was thought of was some narrowing of the branches of the pulmonary artery in the lungs, but nothing of this kind was discovered. We are inclined on the whole to rather favour the congenital theory.

The case is an interesting one on account of its extreme rarity, no similar case being mentioned by any of the great authorities on malformation of the heart.

A CASE OF CANCER OF THE PYLORUS.

BY ROBERT SAUNDBY, M.D., F.R.C.P.
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GENERAL HOSPITAL, BIRMINGHAM.

T. P., aged 52, farm labourer, admitted June 13th, 1892, complaining of vomiting, which began a month or two before Christmas but had been much worse since that date.

His previous health had been good, and he had had no serious illness. His home was comfortable, and he was always well nourished. He had never met with any accident, but had been ruptured for twenty years. He had been a very moderate drinker.

He said his father died of "old age," and his mother of "dropsy;" one brother died of some unknown cause, and six brothers and sisters were living in good health.

His present illness began with vomiting after food and some pain at the pit of the stomach. On two occasions he vomited what he thought was *blood* mixed with his food. The vomiting had become more frequent lately; it came on about an hour and a half after food.

On admission, the patient was a well-developed, emaciated, elderly man, with a sallow complexion and anxious face. His cheeks were very hollow from the loss of his teeth. Muscles wasted. Weight 9 st. 2 lbs. Slight yellowness of conjunctivæ. T. 99°, P. 60, R. 18. His teeth were very bad, nearly all the molars and præmolars having disappeared. Tongue slightly furred posteriorly, at the tip red and flabby. Mouth dry; deglutition normal; *appetite bad;* some thirst. Pain after food, and then always inclined to vomit, but never on an empty stomach. The vomited matter was brown yeasty-looking stuff, amounting to about two pints; it contained sarcinæ, gave the reaction for free hydrochloric acid with phloroglucin and vanillin, and for blood with guaiacum and ozonic ether, but no blood corpuscles could be seen with the microscope. Bowels confined. A tender area in right hypochondrium, but nothing to be felt. Liver and spleen not enlarged. Stomach evidently dilated, distending the left hypochondriac and epigastric regions, and giving a hyper-resonant note.

The result of a test breakfast (Ewald's) was that the dark-coloured fluid expressed contained no sarcinæ and gave no blood reaction. Free hydrochloric acid was present, but no lactic acid. Albumoses were abundantly present. Artificial digestion of egg albumen was perfect without the addition of pepsin or hydrochloric acid.

On distending the stomach by pumping air through the tube the lower border could be seen to descend below the umbilicus, while the pyloric portion bulged well into the right hypochondrium, but no pyloric solid tumour could be felt. Pulse regular, rather small and of high tension; *cardiac area resonant through-*

out; apex beat in fifth interspace, a quarter inch internal to V. M. L. Sounds a little faintly heard except the second aortic sound which was accentuated. Percussion note over lungs resonant; breath sounds rather harsh with prolongation of expiration.

Urine: alkaline; sp. gr. 1035; no blood, albumen, or sugar. Phosphatic deposit.

Treatment:—

℞. Bismuthi Carb. . gr. x.
M. Tragacanthi . ʒ j.
Aq. Cinnamomi ad. ℥ j.
Ft. Ht. t. d. s.

Stomach to be washed out every other day. Diet: minced meat, bread or toast, butter, eggs, custard pudding, one pint of milk; no vegetables; small meals every two hours.

This plan answered very well for ten days, during which no vomiting occurred and the pain ceased. But on the 26th he was sick again, and he complained that he could not eat the minced meat which was accordingly stopped.

On July 3rd the vomited matter gave no reaction for free hydrochloric acid.

July 4th a consultation was held, and it was agreed to open the abdomen with a view to performing gastro-jejunostomy, but he declined any interference.

July 8th. He died. During the last week he vomited daily in spite of the use of the stomach tube.

Autopsy.—On opening the abdomen the stomach was seen to be greatly dilated, its lower border reaching to the umbilicus. The *antrum pylori* was distinctly saccular. The following measurements were made:—

Length of smaller curvature, 7 inches.
" " greater " 23 "
Transverse diameter (max.) 8 "

On opening the stomach its mucous membrane presented the appearance of severe chronic gastritis, being slate-coloured and thickened. The pyloric orifice was involved in a hard annular mass of carcinoma, about 1½ inches in length and ½ inch in breadth. The surface of the growth was ulcerated. The pyloric ring scarcely admitted the tip of the finger. Under the microscope the growth shewed the structure of a scirrhus carcinoma. The pylorus was only slightly adherent; there were a few enlarged glands in the hilus of the liver, but no secondary deposits in any organ. The heart was fatty, but the other organs shewed no special pathological change.

Remarks.—The chief interest in this case lay in the diagnosis. Cancer of the stomach is in my experience a rare disease in Birmingham and its neighbourhood, so that we get by no means numerous opportunities of testing the value of the diagnostic rules which have been laid down. What are the symptoms and signs of carcinoma of the pylorus? Loss of appetite, great and rapid wasting, coffee grounds vomit, pain generally lancinating and severe at the pit of the stomach, a palpable pyloric tumour and absence of free hydrochloric acid from the stomach contents.

Loss of appetite is a symptom of some importance in differentiating cancer from other painful affections of the stomach, in which the patients would gladly eat but are prevented by dread of pain. In cancer, anorexia is marked; there is no desire to take food. This symptom was present, but by itself it cannot be considered diagnostic, as in catarrh of the stomach appetite may be impaired.

Great and rapid wasting is of special significance, but we were without any very trustworthy data. The patient did not know his former weight, and his persistent vomiting would account for decided failure of nutrition. He had always been a sparely nourished man.

Coffee grounds vomiting was never present, though the patient thought he had vomited blood. The guaiacum test is not reliable in stomach contents, and no blood corpuscles could be seen with the microscope. When it does occur it is very significant, as the hæmatemesis in ulcer is almost invariably more profuse, and the blood is not altered by resting in the stomach.

Pain was noted in the history, but after admission he never complained of any, and even the tenderness was very slight.

No *palpable tumour* was ever discovered, although he was repeatedly examined, and as the abdominal walls were very relaxed, it was quite easy to palpate.

Absence of free hydrochloric acid is one of the recent additions to diagnosis, which we owe to German clinicists. A test breakfast, consisting of some bread and half-a-pint or a pint of weak tea is given, and three-quarters of an hour or an hour after the stomach contents are removed by the tube and tested for free hydrochloric acid by means of Ewald's phloroglucin and vanellin solution, which gives a bright scarlet reaction if any free hydrochloric acid is present.

The formula for this solution is—

Phloroglucin . .	2	grammes
Vanellin . . .	1	,,
Absolute Alcohol .	30	,,

A drop or two are placed in a porcelain capsule with a few drops of filtered stomach contents and gently heated over a lamp so that the fluid slowly evaporates, when bright red streaks appear at the edges of the evaporated drops if free hydrochloric acid is present. This test on the first occasion gave positive results, proving the truth of Ewald's proposition, that when cancer is localised, the secretion of hydrochloric acid may be maintained till shortly before death. At a subsequent examination of gastric contents no acid was found. But the absence of free hydrochloric acid is not diagnostic of cancer. It can only be said that so long as free hydrochloric acid is present the case is probably not one of cancer, but the present instance is an example that this is not to be relied on.

There was no doubt that the stomach was greatly dilated and that there was an obstruction at the pylorus. The loss of cardiac dulness was due to this cause. When the stomach-tube had been passed, the nozzle of a spray-producer was introduced into its upper end and air pumped in, so as to demonstrate the great size of the organ during life. The nature of the obstruction was the only point of doubt; the patient's age and the history of hæmatemesis spoke in favour of cancer; the absence of a tumour and the presence of free hydrochloric spoke against it. There was legitimate ground for doubt, but the balance of probability was certainly in favour of cancer.

The treatment consisted in seeking to allay the gastric catarrh, by washing out the stomach, by bismuth, and by suitable diet. As these at first succeeded, nothing further was done; when they failed, an operation was proposed, but declined by the patient. The operation which was contemplated was that of gastro-jejunostomy, by which an opening is made to connect the stomach directly with the jejunum.

Remarks by Mr. Chavasse.—This case is an example of a class that the advances of abdominal surgery, in the last few years, have brought within the range of operative interference, either with the view of palliation or cure. To be really effectual—this fact must be steadily maintained and constantly reiterated—surgery should be resorted to as a method of routine treatment as soon as the diagnosis is as complete as it is possible to make it. In dealing with an intelligent patient suffering from cancer of the pylorus the clinical facts, the *pros* and the *cons* of the operations may be discussed with little reserve, and at least he should have the chance of selecting or declining other treatment than that by drugs and diet. On being asked to see the above patient with Dr. Saundby, it was evident that we had to deal with an enfeebled man, old beyond his years, with no tumour to be detected by the palpation of a thin abdominal wall, and that any operation undertaken must, in the first instance, be exploratory to define the exact nature and the limits of the growth, and to decide whether its complete removal or otherwise should be attempted. Three measures were discussed—1st. Excision of the Pylorus:—It was deemed inadmissible as the statistics of the operation give a high rate of mortality, Winslow putting it at 76 per cent., but as Saltzmann has shewn (*Central Blatt für Chirurgie*, 1886, V. 23) this depends in a great measure upon the adhesions which are found to exist—the greater their extent the higher the fatality.

2nd. The combined operation of Pylorectomy and Gastro-Enterostomy has been successfully performed by Jesseth and a few others, but the method must be regarded as still on its trial, and owing to the length of time necessary for carrying out its details it is hardly applicable to enfeebled and emaciated patients such as the one under consideration, but it promises well for early cases of pyloric cancer.

3rd. In consultation, my colleagues, Messrs. Barling, Haslam, and Heaton, all agreed with me, that gastro-enterostomy, pure and simple, was the most likely procedure to give temporary relief, for if carried out with Senn's plates the anastomosis with the stomach and the first presenting coil of single intestine can be readily made, with efficient assistance, in thirty or forty minutes. Woelfler's operation, on the other hand, takes almost as long as the combined operation, and was discarded for this reason.

The patient's friends, however, ultimately declined any operative interference and it was not pressed. As death took place within three days, surgical treatment, if carried out, might have been blamed for its occurrence.

CASE OF SLOUGHING FIBROID POLYPUS SIMULATING CANCER.

BY C. E. PURSLOW, M.D. (LOND.),
HONORARY OBSTETRIC OFFICER, QUEEN'S HOSPITAL, BIRMINGHAM.

H. L., æt. 47, admitted to the Queen's Hospital, April 17, 1892. Patient was in an extremely emaciated and exhausted condition and scarcely able to speak, looking indeed like a woman dying of cancer. The following history was with difficulty obtained:—

Three children, last thirteen years ago, menstruation regular up to eight weeks ago.

Four months ago began to have "smarting in the womb" and bearing down, which came on at irregular intervals and gave great pain; about the same time her appetite failed, and she began to feel weak. Two months ago she had a profuse menstrual loss; there has been no blood since. About six weeks ago a profuse foul smelling discharge set in and has continued since; she has lost flesh rapidly, and has had several shivering attacks, and has been quite unable to hold her water, which dribbles away.

Present condition.—In addition to the extreme emaciation and cachexia, she had a swollen and ulcerated tongue and constant vomiting and diarrhœa, and occasional delirium, with feeble rapid pulse. There was a very fœtid discharge issuing from the vulva, and the thighs were sore from the dribbling of urine.

On examination, a large tumour could be felt filling up the vagina, not absolutely fixed. With a little difficulty the finger could be passed over the tumour, the surface of which was irregular and ulcerated, and a distinct thick pedicle could be felt above. The bladder could be distinctly felt bimanually with much thickened walls, and the urine, when pressed out, was found to be ammoniacal and containing pus. Despite the patient's desperate condition, it was thought advisable to remove the tumour, though it seemed doubtful whether she would survive the operation. An anæsthetic was given with the patient in the lithotomy position, the strong wire loop of the ecraseur was after a little manipulation passed up over the tumour and the pedicle divided. After doing this, it was found to be impossible to get the tumour past the perinæum, without dividing it; this was done, and the tumour removed.

After removal it was found to be almost globular, the size of a small cocoa-nut and having a distinct pedicle about 1¼ inch thick. The surface of the tumour to the depth of about half an inch was soft and exuding pus, but the deeper portions were firm and had the ordinary appearance of a hard fibroid.

The patient rallied from the operation, and for a few days it was thought that she would survive, but in spite of frequent washing out of the bladder, the urine remained ammoniacal and she gradually sank and died on the tenth day apparently from exhaustion.

The most interesting point in this case is that of the diagnosis. The general condition of the patient exactly resembled that of one in the last stage of cancer, and the physical signs too resembled those of cancer, and it was only by finding that the finger could be passed round the mass and a pedicle felt, that the diagnosis was made clear.

She had attended a hospital a month before her admission to the Queen's, and as no operation was proposed, the case was doubtless diagnosed as one of cancer. A point worthy of note is that from the time when the sloughing apparently began she had no further hæmorrhage.

In a case of sloughing sub-mucous fibroid, which I published in the *British Medical Journal*, in 1890, the same thing was noticed. The sloughing in this case was marked by the sudden onset of the characteristic symptoms, viz.: high temperature and foul discharge, and the tumour which had a broad base was removed after dilating the cervix. From the onset of the discharge the hæmorrhage, which had been most profuse up to that time, entirely ceased.

I am indebted to Mr. Sidney Pritchett, Obstetric House Surgeon for many of the notes, and for valuable assistance in the treatment of the case.

PERISCOPE.

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GENITO-URINARY SURGERY.

BY GILBERT BARLING, F.R.C.S.

In the *Boston Med. and Surg. Journal*, Oct. 15th, 1891, Dr. Cabot has an interesting article on the treatment of rupture of the bladder. The first point he raises is that we require, in addition to the ordinary symptoms of rupture, an absolutely conclusive test of its presence. He considers this is effected by injecting solution of boric acid by means of a catheter. Should the fluid not return by the instrument, or, when the injection is several times repeated, if there is variation in the amount of fluid returned, sometimes being more and at other times less than was injected, the evidence is conclusive of rupture. The test might fail in a very small rupture or when a large rent is closed by the prolapse of a coil of intestine. Dr. Keen's suggestion of air injection is regarded as unreliable. If the bladder is intact there will be a rounded tympanitic tumour in the hypogastrium, if there is an intra-peritoneal rupture the air will fill the general peritoneal cavity. Should the rent however be extra-peritoneal (which in our experience is commonly the case) the injection of air would be no guide.

A rupture having been diagnosed the next question is whether it be extra- or intra-peritoneal. To determine this a median abdominal section is advised. If it be found that the tear does not involve the peritoneal surface, then valuable evidence will have been gained of the direction taken by extravasated fluid, and from this the most suitable position for drainage, a very important matter, can be determined. Urine may be effused in several directions; it may infiltrate up beneath the peritoneum on the anterior wall of the abdomen; it may fill the tissues about the neck of the bladder; or it may escape beneath the peritoneum on one side or the other of the pelvis, and run up into the loose connective tissue towards the kidney. Finally, it may extend in more than one of these directions.

The topical treatment of Cystitis by Corrosive Sublimate.—*The American Journal of the Medical Sciences*, July, 1892, quotes Guyon, on the treatment of cystitis by instillations of corrosive sublimate. He arrives at the following conclusions, based upon his observations and the results obtained by the topical application of corrosive sublimate in the following twenty-six cases of cystitis:—

Of ten cases of tubercular cystitis, five were greatly ameliorated, two of these he would call cured if it were not for the difficulty of exact diagnosis, and the well-known tendency to relapse in all conditions of tubercular origin, and he lays special stress upon the fact that in these cases the corrosive sublimate was well-borne, the reverse being true of all other medicaments whose topical applications he has studied. Of seven cases of gonorrhœal cystitis, four were cured, one ameliorated, and one case of pseudo-membranous cystitis was cured. He found that an inverse ratio exists between the number of micturitions and the capacity of the bladder, and that it has a physiological, not an anatomical capacity. This led him to use instillations instead of lavages, drops instead of drachms, and he obtained by these methods, using solutions of equal strength, entirely different results. He draws the following conclusions from the work of Hallé regarding the antiseptic power of corrosive sublimate. It is powerful against microbes of the air; weaker against the microbes of the urine than against the ordinary pyogenic microbes, and very weak in its antiseptic power over purulent urine, only acting when used in enormous doses. He found the nitrate of silver less powerful over the microbes of the air, but greater over the microbes of the urine than on the ordinary pyogenic microbes, though in neither case was it as efficient as the sublimate, while the same is true of its power over the microbes of purulent urine when used in proportionate doses.

With regard to the efficiency of the sublimate in destroying the bacillus of tuberculosis, he believes the great amelioration amounting to almost absolute cure in the cases of tubercular cystitis, confirms the belief that it is the most active agent we possess, and the culture experiments of Hallé demonstrated the fact that the presence of sublimate in a gelatine culture, even in the form of albuminate, prevents the growth although it does not destroy the tubercle bacillus. With regard to the effect of these germicides upon purulent urine, the experiments shew that it is impossible to apply either remedy with hope of success where there is purulent urine.

He gives the following as his method of treatment. He believes that instillations should be substituted for lavages, as the sensibility of the bladder, both in its normal and pathological conditions, is dependent upon the distention of its mucous membrane, and he finds that by this method he can more easily increase the strength of his solution while lengthening the time of its retention. The instillations are made in the ordinary manner: the fluid should be introduced into the posterior part of the urethra, as this part always participates in any cystic inflammation. The solutions should be made of boiled distilled water, and must be made without alcohol. The bladder must be void of urine, a catheter being used if required. The first instillation should not exceed 20 to 30 drops of a 1 : 5000 solution and may be increased in quantity to one drachm, and in strength to 1 : 1000. This he considers the limit of safety, although the dosage both as to quantity and strength is entirely relative and depends on the sensibility of the bladder, excessive pain demanding weaker solutions, while inability to retain the solution is the indication for a lessened quantity.

In all his observations he has seen no harmful results from this method of treatment.

Papilloma of the Kidney.—The *Med. Chron.*, July, 1891, contains an account of a case of papilloma of the kidney successfully treated by operation by Mr. T. Jones. The patient was a male aged 55, who, eighteen months previous to admission to the Manchester Infirmary, experienced, when walking, a sudden faintness, with thirst and urgent desire to urinate. The urine then contained a lot of blood. Subsequent symptoms were a throbbing pain in the right loin (almost constantly present), anæmia, and emaciation to the extent of 34 lbs. The urine was strongly alkaline and contained much blood, but no clots and no portions of growth. Exploration of the bladder gave negative results; the right kidney could not be felt enlarged, but there was increased muscular resistance.

The right kidney was explored by the lumbar incision. Examination with the finger and needle telling nothing, the organ was incised, and a soft villous growth, the size of the end of the thumb, found occupying the pelvis. It was removed with the finger and a Volkmann's spoon, the thermo-cautery being applied to a few bleeding points Further examination revealed what was regarded as another growth higher up in the pelvis, but the patient's condition was too bad to allow of further examination. After the operation, a good deal of urine was passed by the wound, at first mixed with blood, but in three days it had quite cleared. A good recovery followed. Some time afterwards the patient was again seen, when he complained of vague pains on the left side, but there was no hæmaturia. The right kidney was palpable, and pressure on it gave rise to pain.

The prominent symptom in this case was hæmaturia, which was not influenced by astringents or rest. There were no attacks of renal colic, and renal cancer seemed out of the question, seeing that the kidney could not be felt after eighteen months' symptoms. The bladder does not appear to have been examined with the cystoscope, which might have obviated the necessity of the exploration of the bladder, and at the same time have told with certainty that the right kidney was the source of the bleeding. A brief *résumé* of similar cases is given.

Abdominal Nephrectomy.—The *Canadian Practitioner* for January 16th, 1892, contains an account, by Dr. J. Wishart, of abdominal nephrectomy for hydro-nephrosis, with a report of two operations. Both the patients were women, and in each a diagnosis of ovarian tumour had been made, which was only corrected at the time of operation. The ordinary median incision for ovariotomy was resorted to, and on the diagnosis being rectified, this was enlarged upwards and the tumour enucleated. In each case the cyst burst, and some of the fluid escaped into the abdominal cavity, whence it was washed out. Curiously enough, although both patients did well at first and eventually recovered completely, they both had sharp fever and general disturbance about the tenth day. The presence of an inflammatory collection was carefully looked for, but none was found in the one case, though the other apparently had an abscess which discharged through the vagina. After commenting on the difficulties of diagnosis in these cases, especially from ovarian tumour when the hydro-nephrosis is a large one, the various operative procedures are reviewed and the following conclusions are arrived at:—

1. That in a large proportion of cases of advanced hydronephrosis, where the tumour fills the abdomen, it is impossible for the average operator to say whether he has a cyst of the kidney or an ovarian tumour to deal with.

2. That, supposing hydronephrosis is suspected, it is not possible to say which kidney is the diseased one.

3 The last two propositions being admitted, it follows that, in all these advanced cases, incisions in the loin and drainage cannot be advocated, as the surgeon is unable to say which side to incise.

4. In view of these difficulties in diagnosis, it would seem preferable to make an incision in the linea alba and complete the diagnosis with the hand. If the case be a cyst of the kidney, carry the incision upward and complete the operation by enucleating the tumour.

5. This operation is suitable alike for cases of hydro- or pyonephrosis, the danger of course being greater in the first. [? G.B.]

6. That abdominal nephrectomy by the median incision is a difficult operation, owing to the high position of the tumour, the close relations of the aorta and vena cava, the large size of the renal vessels, and the fact that the tumour is behind both layers of peritoneum.

7. If a correct diagnosis could be made, I am of opinion that abdominal nephrectomy by incision along the linea semi-lunaris is the best operation for the class of cases under consideration, but I do not think it possible to remove such large cysts by incision in the loin.

8. In the case of a weak patient, or one advanced in years, supposing the abdomen to have been opened, it might be the safer procedure to open the cyst and drain from the loin This

operation is safer than nephrectomy, but it usually leaves a permanent fistula.

9. In view of the symptoms observed in the two cases reported, I think it would be advisable in completing the operation of abdominal nephrectomy to secure drainage by making an opening in the loin.

Nephrolithotomy and Nephrorraphy.—In the *Annals of Surgery* for March and February, 1892, there is a long study by A. Schachner, M.D., on injuries of the kidney, nephrolithotomy and nephrorraphy. In the earlier pages the symptomatology, diagnosis, prognosis, and treatment is discussed from a clinical point of view, though it does not appear that the author is speaking much from his own experience. To control hæmorrhage, which in injuries of the kidney may be of such great importance, several methods of suture are suggested. The conclusions are based mainly upon the study of injuries inflicted upon animals, and are consequently of less value than they would be if derived from clinical work. The following are the principal ones, on injuries of the organ.

The external damage offers no safe criterion as to the extent of the internal injury. However slight the injury may seem, no definite conclusion can be reached as to its extent or its ultimate termination.

In view of the uncertainty which ever surrounds the diagnosis of conditions in regions remote from ocular inspection or digital touch, the prognosis should always be guarded. The sequelae which frequently attend even trivial injuries should be kept carefully in view in rendering our prognosis and shaping our treatment.

In all operative attacks upon the kidney the capsule and perirenal structure should be preserved as carefully as possible, since these not only add to the strength of purchase but afford additional protection against hæmorrhage and sepsis.

A gun shot injury amounting to a simple perforation is best controlled by the application of a purse-string suture to both orifices. This may be reinforced by a covering of peri-renal structure drawn together in a similar manner.

The hæmorrhage from superficial lacerated wounds of the kidney can confidently be arrested in the majority of instances by means of a single or double purse-string suture applied one cm. or more from its edge.

Incised wounds whose aseptic nature is questionable are best treated by tamponnade (!), and drainage through the loin. Wounds of the pelvis should be closed with a double row of sutures, as an additional measure against the formation of a fistula.

Unless the wound of the ureter is singularly slight as compared to the size of the duct, nephrectomy is as a rule indicated as the most practical step.

The incision in partial resection for the relief of an injury should be made distant from the contused region to insure the apposition of two healthy renal surfaces.

The choice of the incision in all operative attacks is largely to be determined by the nature of the condition and the character of the operation. Where the operation is of the character of a nephrotomy, dependent upon some cystic or suppurative process, the lumbar is the preferable incision. Whenever the lumbar incision becomes insufficient, the space can be enlarged by another incision in a *horizontal (?)* manner, after the precepts of Kœnig or as recommended by Newman. Unless specially contra-indicated, by reason of sepsis or other valid causes, the abdominal incision should be preferred. Early diagnosis and successful treatment go hand in hand. Procrastination means untold suffering to the individual and the steady increase of the dangers militating against the ultimate success of the operation.

The renal artery can safely and successfully be compressed, rendering not only the operative field bloodless, but adding to the thoroughness of the operation and the chances of its success. The closure of the wound, unless contra-indicated by drainage, should be preceded by a careful irrigation of the pelvis and a thorough removal of all blood clots.

Whenever practicable, an incision through the kidney substance should be given the preference over one performed through its pelvis.

The bottom of a renal incision should be approximated through deep sutures, while the superficial edges are united by a separate row of superficial stitches. If the kidney has been much disturbed, it should be stitched "*in situ.*" In anchoring a floating kidney, it should be replaced as nearly as possible in its natural location.

In a dog, the implantation of the kidney between the transversalis and internal oblique muscles is a practicable and feasible step. In such an instance, changes in the organ thus submitted are not sufficient to have any practical bearing upon the success of the procedure. The feasibility of a somewhat similar step in the human subject is questionable.

SURGERY.

BY GEORGE HEATON, F R.C S.

Malignant Disease of the Tonsils, with 10 illustrative cases.—D. Newman (*Amer. Jour. Med. Sc.*, May, 1892)—Malignant disease of the tonsils is not so rare as is generally considered to be the case. The author has collected 144 such cases, including 10 of his own. The clinical history of these 10 latter ones is given. They included two of sarcoma and eight of carcinoma. One of the cases of sarcoma was operated upon and lived five years afterwards, ultimately dying of sarcoma of the opposite tonsil.

There has hitherto been much confusion in the classification of the different malignant growths of the tonsils. Many round-celled sarcomata have been included under the head of encephaloid cancer, and this latter class has consequently been regarded as relatively common, whilst in reality it is very rare.

The disease in both cases extends rapidly, and the neighbouring lymphatic glands become early implicated. In carcinoma however, there is a greater tendency towards sloughing of the mass with the formation of foul ulcerating cavities. In sarcoma, the growth is, as a rule, more consistent.

The other varieties of malignant disease, are epithelioma, scirrhus carcinoma, spindle-celled sarcoma, and adeno-sarcoma. Turning to the question of treatment, the rapid dissemination of the growth, and the failure in most cases to recognise the serious nature of the disease, have combined to render radical curative measures less successful in this region than in most other parts of the body.

Removal may be performed in the following ways :—

1. By chemical caustics and escharotics.
2. By tonsillotome or curette.
3. By ligature, ecraseur, electric cautery, or electrolysis.
4. By incision, with or without previous tracheotomy.
5. By external incision, with or without previous tracheotomy.

The first two methods are condemned as being both useless and dangerous. The thermo-cautery has been used with success by several operators, but little or no good can be expected from electrolysis.

Removal by incision in the mouth should only be attempted when the growth is limited, and the lymphatic glands are not involved. Hæmorrhage in such cases is likely to be severe, except in cases of sarcoma in its early stages, when the mass may occasionally be shelled out of its capsule with very little bleeding. Complete enucleation may thus sometimes be effected with the finger, after making an incision through the capsule.

Operations for removal of malignant disease of the tonsil by an external incision were introduced first by Langenbeck in 1865. Since then most surgeons have used this method. It gives much greater command over the hæmorrhage, and an opportunity of removing any enlarged glands at the same time. A preliminary tracheotomy is advisable. Czerny in his operations, cut down upon the lower jaw and divided it between the 2nd and 3rd molar teeth. The tumour was exposed and removed by separating the fragments, and the jaw afterwards united with strong wire sutures.

Mikuliez and Kuster have devised a new mode of operating. They endeavour to remove the tonsil without cutting through the mucous membrane of the mouth. It is therefore impracticable in cases where ulceration has taken place. They make an incision downwards and forwards from the mastoid process to the greater corner of the hyoid bone. The jaw is exposed and divided, and the ramus separated from the temporal muscle, so as to allow the bone to be drawn to one side. The masseter, internal pterygoid, digastric and stytohyoid muscles are then divided, and the tonsil exposed with its surrounding lymphatic glands.

In only 56 cases out of the 144 reported, was an operation for complete removal attempted. In carcinoma cure is extremely rare. The most successful case of the kind being one recorded by Macewen, whose patient was in good health 12 years after the operation. Barker, Cheever, Goreiki, Richardson, and Langenbeck also record cases with long after-periods of freedom from all trouble.

As regards the palliative treatment of the cases where radical measures are contra-indicated, it is of great importance, as in all cases of malignant disease involving the mouth, to free the parts as thoroughly as possible of the septic acrid secretions of the growth.

Pain is to be relieved by some local anodyne such as chloral and camphor or cocaine. In the later stages morphia is almost always necessary. Interference with respiration may call for tracheotomy.

Hæmorrhage is a common accompaniment of the disease, especially in the round-celled sarcomata. Astringent gargles, ligature of tumour, the galvano-cautery may each be tried. In desperate cases ligature of the lingual and facial arteries, or even of the carotid itself may become necessary.

A Report of 392 cases of Intubation and 139 cases of Tracheotomy at the Boston City Hospital.—W. H. Prescot, M.D., and J. E. Goldthwait, M.D. (*Boston Med. Surg. Journal*, Vol. cxxv., No. 27).—Interesting statistics are given in this short communication on the results of intubation and tracheotomy, and the two operations are compared. But it must be borne in mind that in the 139 cases of tracheotomy are included 36 cases in which intubation had previously been performed, and 21 in which it had been unsuccessfully attempted.

Of the 392 cases of intubation for laryngeal obstruction, 312 died and 80 recovered, giving a mortality of 79·5. Under the age of 3, intubation was rarely followed by recovery, there being only 18 successful cases out of 123 operated upon. The average length of time that the tube was worn in the cases that recovered was 5 days 18 hours. The age of the child has a decided influence upon the length of time that a tube is required, the younger the child the longer being the time before it can be dispensed with. Numerous accidents occurred in this series. In 10 cases the tube was plugged with membrane, and in three death occurred during the attempt to insert the tube. In two the introducer broke; in two the insertion of the tube caused convulsions, and four stopped breathing after re-insertion of the tube, rendering tracheotomy necessary.

In two cases the tube was drawn into bronchi. These cases are so instructive that the clinical notes are given.

One of the patients was a female child, aged 15 months. She had been ill a week, with laryngeal symptoms for six days. On admission an intubation tube was passed and was worn three days and then coughed up. The tube was a "two year old one." It was replaced, coughed up again the next day and again replaced. Then worn three days and again coughed up. A "three to four year old" tube was then substituted and worn five days. It was then removed and replaced. Soon afterwards the breathing suddenly became laboured, and as the tube could not be felt in the larynx tracheotomy was performed. The next day the tube was felt in the left bronchus; it was removed with great difficulty, but the child died of exhaustion.

In the other case the tube was found *post mortem* in the right bronchus.

The absence of "autopsies" renders the cause of death uncertain in many cases. Sepsis is accredited with about hal the number of deaths.

Tracheotomy was performed in 139 cases, 82 of these were primary with 11 recoveries, the others were after intubation or attempted intubation. Nineteen of the cases were moribund at the time of operation. The average length of time in which the tube was worn in the successful cases was 9 days and 5 hours. The causes of death were very similar to those after intubation.

Of the 80 cases of intubation who recovered, 37 were seen a year and a half afterwards; all were in good health, perfect voice, and presented no evidence of ulceration about the vocal cords.

Taking the total number of cases collected by various American, English, and Continential authors, we have a total number of 2,815 cases of intubation with 32·2°/₀ of recoveries, and 23,941 cases of tracheotomy with 28·67°/₀ of recoveries. But we must bear in mind that tracheotomy is by most of the advocates of intubation reserved for the most severe cases, and that in a considerable number of cases it is had recourse to after intubation has failed.

Two cases of Pyæmia following Suppuration of the Middle Ear, treated by Ligature of the Internal Jugular Vein and cleansing out the Lateral Sinus.—By Rushton Parker (*Liv. Med. Chir. Jour.*, Jan. 1892).—The clinical notes of the first case were as follows. The patient, aged 25, had suffered from slight ear trouble since the age of 14. Eleven days previously he had pain in the head, followed in a few days by vomiting and rigors. On admission to the Hospital fœtid pus was oozing from the left ear, and there was some swelling and tenderness in the neck below the mastoid process. The patient was drowsy and occasionally delirious, and suffered from high fever with rigors.

Double optic neuritis was found, most marked on the right side.

An incision, 7 to 8 inches long, was made in the neck down to the jugular vein, exposing also the mastoid region. The vein, which was found plugged from the base of the skull to its junction with the facial trunk, was ligatured in its healthy part and divided. The mastoid region was then opened and the interior of the lateral sinus exposed. This too was occupied by green purulent lymph. The detached jugular vein was cut away to within an inch of the base of the skull, and the lymphy lining of the remaining portion scraped away. The sinus was also scraped, and on probing upwards free bleeding occurred which was stopped by a plug of antiseptic wax.

The lower half of the wound was closed and healed by first intention. The upper half was plugged with cyanide gauze.

The symptoms disappeared for two days. The temperature again rose on the third day. The wax plug was removed from the sinus and some fœtid pus evacuated. The mastoid antrum was also opened up and thoroughly scraped. After this the patient made a good and perfect recovery.

The second case wás somewhat similar. On exposing the lateral sinus it was found full of fluid blood, Two days afterwards the jugular vein was exposed and tied. The lateral sinus had by this time become blocked. It was also laid open and contained a thick lining of putrid lymph enclosing pus. The parts became sweet and free from suppuration, but the patient died three days later with symptoms pointing to meningitis.

Some points concerning the opening of the Mastoid Process.—Th. Herman (*Archives Otology*, Vol. xiv.)—The author first of all sums up the present indications for this operation, which are as follows :—

1. In acute purulent otitis media, with inflammation of the mastoid process, which does not yield to anti-phlogistic measures.

2. In acute and chronic purulent otitis media, when the escape of pus is impeded by granulations in the middle ear, or stenosis of the auditory meatus, causing recurrent attacks of inflammation of the mastoid.

3. When the mastoid process is healthy, but the thorough removal of pus is impossible, and dangerous symptoms manifest themselves.

4. In congestive abscesses and fistulas of the mastoid process.

5. In persistent continuous pain in the mastoid process not yielding to treatment though there is no retention of pus.

6. As a prophylactic operation when death is to be feared from imperfect disinfection. He would further add two other classes of cases in which the operation is necessary.

7. In acute otitis media in which without signs of mastoid inflammation the discharge of pus is profuse, and does not yield to the usual method of treatment.

8. When there are distinct symptoms of inflammation of the brain and its meninges. Although in such cases the chances of success are very doubtful.

In such cases he advises an early operation. In his last 59 cases he only lost 4 patients.

Injury to the transverse sinus is in his opinion a rare event, and the result, even when it does occur, is not serious.

In the actual performance of this operation as a rule the chisel alone is used.

Laparotomy for Intestinal Perforation in Typhoid Fever.—By Weller Van Hook (*Med. News*, Nov. 21st, 1891).—The objections which have been raised against laparotomies in typhoid fever are discussed and disposed of. It is never contra-indicated except when the patient is actually moribund. Collapse is only a contra-indication when the immediate forerunner of death.

The diagnosis of perforation in typhoid fever is first discussed. The chief signs and symptoms pointing to such an event are, sudden violent abdominal pain, increasing tenderness in the ileo-cæcal region, shock, early peritonitis with tympanites. Disappearance of the liver dulness is not always present, because only fluid matter may escape through the perforation. Operation for the relief of such symptoms must be undertaken at once and without waiting for evidence of peritonitis.

The clinical details of three cases are given in which operation was performed, with recovery in one case. The perforation in this case was found in the ileum near the ileo-cæcal valve. It was closed by three rows of interrupted Lembert sutures in the longitudinal axis of the bowel. The peritoneal cavity was thoroughly washed out with hot sterilised water, the omentum was drawn carefully over the injured coil of intestine and sutured to the mesentery, and a large sized drainage tube was placed in Douglas' pouch.

The operation has up till now been performed seventeen times with four recoveries. Great care is necessary during its performance in examining the coils of intestine, any traction in the bowels being very likely to produce further perforation. In the majority of cases, the perforation will be found within a few feet of the ileo-cæcal valve. Lücke has recorded one case in which he resected the portion of bowel, but this can be rarely required, the perforation being usually but small.

He recommends, as part of the after treatment, a rectal injection of magnesium sulphate glycerine and water, repeated if necessary to prevent peritoneal exudation by producing a few watery passages.

REVIEWS.

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A TREATISE ON BRIGHT'S DISEASE OF THE KIDNEYS.*

THIS is the third edition of a work which has been previously noticed in these pages. The first portion is devoted to the normal anatomy of the kidney, to which the author makes certain original contributions in the region of its minuter structure, *e.g.*, on the nature of the rod-like appearance in the epithelium, which he believes is due to a specialised arrangement of the reticulum to favour secretion, and on the terminations of the nerves, which he claims to have traced in the form of a delicate plexus distributed to the epithelial cells.

In the section on the urine he withdraws from his former position respecting physiological albuminuria, the occurrence of which he now denies; in fact he goes so far as to say that "albuminuria independent of renal changes has got to be demonstrated to have an independent existence." It is needless to say therefore that he does not accept Seminola's theory that Bright's disease is caused by the excretion of a hetero-albumen, but it is certainly a position which is more clearly defined than easy to maintain. The test for albumen which he recommends is composed of glacial carbolic acid two parts, pure acetic acid seven parts, and liquor potassæ six parts, the mixture to be filtered; but he admits that it gives the reaction with mucin, but the cloud is said to be a little above the line of contact. We have frequently discussed the question of tests, and trust that our readers will adhere to boiling and acidulation with weak acetic acid until some good reason has been shewn for abandoning it. With respect to casts, he says that they are never found apart from nephritis. Such a statement is a little too strong, though we may admit that casts always indicate at least temporary renal irritation.

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* A Treatise on Bright's Disease of the Kidneys. By Henry B. Millard, M.A., M.D. Third edition. New York: William Wood and Co.

The classification of Bright's disease which he adopts is—1, croupous; 2, interstitial; 3, suppurative; and he denies that in the chronic "croupous" form there is any growth of connective tissue, although this point is generally conceded now in Europe, and he admits that in "interstitial" nephritis the epithelial may undergo certain inflammatory changes. The broad questions of general pathology and etiology are not discussed, but the conventional descriptions are associated with these types. Suppurative nephritis is dismissed in three pages. A chapter on nephritis without albuminuria refers chiefly to those slight cases of nephritis in which there is either no albuminuria or none which is regarded as of importance, occurring in the course of acute diseases and which are so often the starting-point of serious organic disease.

With respect to treatment, Dr. Millard (who is we believe what is called in America an eclectic—that is, a follower of Hahnemann to a certain length) recommends minute doses

$\frac{1}{500}$th of a grain) of corrosive sublimate, increasing to $\frac{1}{50}$th of a grain; and he draws attention to the fact that corrosive sublimate, given internally, will produce nephritis. But this is true of all, or nearly all, the metallic poisons, so that the value of the "fact" is not great. Cantharides is another remedy which he recommends in accordance with the law of similars. The writer of this notice gave a fair trial to both these remedies some years ago, and was unable to observe any benefit whatever resulting from their use. It is fair to state that Dr. Millard also recommends the usual remedies. The important bearing of etiology on the classification and proper understanding of Bright's disease is well brought out by the author's remarks on the curability of "interstitial nephritis." Under this heading he says he is convinced of its curability if treated early, and instances the nephritis which is set up by cystitis as subsiding when the cystitis is cured; "and if after cystitis, why not after other causes?" These are the author's own words, and they surely shew a lamentable inability to grasp the principles of medicine. It is an old aphorism, *causâ sublatâ tollitur effectus*, and the whole question depends upon the removability of the cause. A woman gets commencing interstitial nephritis from pregnancy, and developes all the signs, including cardiac hypertrophy and albuminuric retinitis, but has no more children and gets quite well. A man gets the same from the uric acid diathesis, which persists, and the result is that he dies. In one case the cause has ceased, in the other it persists. There is nothing essentially incurable in inflammation of the kidneys, provided that we can succeed in discovering and removing the cause; but we fear that at present it is impossible in very many cases to remove the cause even where we can recognise it.

The book is well printed and handsomely bound, and is illustrated by a number of rather coarsely executed woodcuts.

ON GALLSTONES AND THEIR TREATMENT.*

On the subject of gallstones Mr. Mayo Robson speaks with some authority. He is recognised as a careful investigator and an able and dexterous surgeon—one who is a master in the domain of hepatic surgery. His book on gallstones will therefore be read with interest.

After describing the surgical anatomy of the biliary ducts and gall-bladder, he devotes a very long chapter to the reproduction of his already published observations on the physiology of the bile. There was no need for the introduction into what is a professedly clinical manual of the details of his experiments; it would have been quite enough if he had given us merely the conclusions at which he had arrived. We suspect that this tedious chapter was introduced mainly as "padding." At the same time, we do not underrate the value of his observations; they are of great importance, and demonstrate *inter alia* how little reliance may be placed on experiments on the lower animals, and how misleading it is to apply conclusions based on such experiments to the human being.

The author's observations were made on two patients, one of whom had a biliary fistula through which the *whole* of the bile was discharged, none passing into the intestine; the other had occlusion of the cystic duct, and a fistula through which the whole of the secretion of the gall-bladder, unmixed with bile, flowed. He concludes that the bile is chiefly an excrement, that without it enough fat can be digested for the maintenance of health, that it is not a natural aperient, that its antiseptic properties are very slight. Professor Rutherford's well-known experiments on the dog shewed that euonymin, iridin, podophyllin, etc., greatly augmented the secretion of bile; Mr. Mayo Robson's observations on the human being demonstrate that they either have no influence at all, or actually diminish it! In the secretion of the gall-bladder he found evidence of a mild diastatic ferment, the existence of which was pointed out some years ago by Mr. Lawson Tait.

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* On Gallstones and their Treatment. By Mayo Robson, F.R.C.S. London: Cassell and Co. 1892.

In the chapter on the pathology of gallstones the author narrates numerous real and supposed causes of their formation. There are so many conflicting opinions on this subject that probably very little indeed is really known. Mr. Robson believes that while in the female sex tight lacing, child-bearing and advancing years predispose to the condition, the exciting causes are to be found in a catarrhal condition of the biliary passages, a retarded flow of bile, and an excess of cholesterin and bilirubin-chalk in the blood and bile. The author points out that in cases of jaundice, if the urine be submitted to the ordinary tests for albumen, a precipitate of bile acids occurs which might easily be mistaken for albumen.

The chapter on Diagnosis is well written. In cases where the diagnosis lies between a renal tumour and a distended gall-bladder, Mr. Robson has found Ziemmsen's test of great value. This consists in distending the colon with air or carbonic acid gas by injection per rectum, when if the swelling be renal it will be pushed further into the loin; if it be gall-bladder, it will be pushed forwards and upwards. Jaundice, associated with a distended gall-bladder, has in all the cases he has observed been due to cancer.

We gladly observe that the author condemns the method, advocated by Dr. Harley, of aspiration and sounding for stones. "It is an uncertain and risky proceeding, which may safely be relegated to oblivion." A small exploratory incision is infinitely preferable. A hundred and one remedies have been vaunted by different physicians as having a curative influence. Of the value of such medicines he has a wholesome scepticism; but he seems to think that the drinking of hot Carlsbad water may prevent stagnation of the bile, and so check the further increase of calculi. Dr. Harley's method of massaging the stones along the ducts into the intestine is rightly dismissed as useless and dangerous.

The various operations performed are somewhat briefly described. Cholecystotomy is the operation he advises. In rare cases he performs cholecystectomy, cholelithotrity, and cholecystenterostomy. The relative merits and disadvantages of these operations are discussed by one who is familiar with the technique of each. He has however only once performed successfully the operation of cholecystenterostomy for the cure of a biliary fistula. It is questionable if the mere existence of such a fistula justifies the running of such a serious risk. Too much space has been devoted to the detailed reports of cases operated on by the author; they fill no less than 120 pages—nearly half the book.

The printing leaves nothing to be desired; the type is clear, bold, and comfortable to the eye.

PTOMAINES AND OTHER ANIMAL ALKALOIDS.*

This unpretending little book gives an excellently clear and accurate account of the chemical properties and clinical characters of ptomaines or animal alkaloids which have been proved within the last few years to play a most important part in pathology, and which afford a scientific explanation of clinical facts which have been long recognised under the vague expression "blood poisoning." The author explains that alkaloids are regarded as compounds in which one or more atoms of hydrogen in a molecule of ammonia are replaced by the radicals, methyl, ethyl, etc.; until recently they were supposed to be only formed in plants, but they are now known to be produced in dead and living animal tissues. Those produced physiologically in living organisms have been called leucomaines, to distinguish them, but there is no essential difference. In a very interesting historical account the author traces the successive advances from the observations of Dupré and Bence Jones, in 1866, of alkaloid-like bodies in the organs, tissues and fluids of human and other animal bodies, up to the crowning discovery by Gautier of the normal development of alkaloids in the systems of animals. The methods for the isolation and detection of these bodies are given in detail, and their general properties and physiological effects are fully explained. The chapter on the clinical bearings of these discoveries is very full, and puts the facts as clearly as possible, although much has yet to be done to clear up many questions respecting the chemical constitution and true pathological relations of the alkaloids formed in disease. Modern chemical research has shewn that besides these bodies there are others equally poisonous, *e.g.*, the toxic albumoses, which are also products of microbic activity, and some of these have been shewn to be capable of producing some of the symptoms of the diseases with which they are associated, as in the case of diphtheria, where the albumose produces paralysis in guinea-pigs and rabbits. Dr. Farquharson relates some interesting cases of insanity where the mental condition apparently depended upon chronic constipation, and it is suggested that toxic substances formed in the bowel were absorbed, and gave rise to the disease. Unfortunately, he does not appear to have looked for ptomaines in the urine of these patients, so that the chain of evidence is incomplete. Another suggestion is that ptomaine poisoning is the probable cause of death where human beings are crowded together, as in the Black Hole of Calcutta, the symptoms resembling in many features the toxic effects of animal alkaloids, and not those of asphyxia, and the author appears to incline to the opinion that air may be poisonous by carrying volatile poisons of this nature, thus explaining the effects of sewer gas. He suggests that the cholera poison may be in this way introduced into the body, so that we get a glimpse of possibilities which may revolutionise our present notions of the influence of microbes in disease, these organisms playing an all-important part in the production of the poison, but not necessarily entering into each individual who is affected by the disease generated by their poisonous products. Such a hypothesis explains the failure to obtain satisfactory evidence of the bacterial origin of certain very infectious diseases which seem to have no incubation period, such as cholera, yellow fever, and malignant remittent fever, which are all associated with particular localities, and only exceptionally capable of passing definite topographical limits.

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* Ptomaines and other Animal Alkaloids: their detection, separation, and clinical features. By A. C. Farquharson, M.D. Bristol: John Wright & Co. 1892.

THE MEDICAL MAGAZINE.*

We very cordially wish godspeed to this new venture in medical journalism, which in general style and appearance resembles the high-class monthly literary reviews, but is intended solely for professional readers. While its contributors will be mainly drawn from the medical professions, we are promised articles from time to time by scientific writers whose names are not to be found in the Medical Register. The subject matter will be of general interest to the profession, and the editor states that while not denying the value of technical researches and of accurate clinical observations, he desires to publish rather a broad summary of the results and bearings of such investigations, than a dry chronicle of minute details. The articles will be for the most part signed, but anonymous contributions will be published, and room will be found for correspondence concerning papers which have appeared in the Magazine.

These proposals seem to us specially attractive, and we trust that the editor will succeed in getting readers as well as writers for his journal. First numbers are always difficult things to manage, but the one before us is in every way creditable. Besides an editorial introduction, it contains an interesting and sympathetic account of the late Dr. H. G. Sutton considered as a medical philosopher and teacher by Dr. Donkin; a paper by Dr. C Creighton entitled "From Mediæval to Modern in the public health of an English City," in which, taking Chester as an illustration, the writer gives a very lucid sketch of the growth of that city, and of its condition formerly, regarded from a sanitary point of view, as revealed by various historical documents.

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* The Medical Magazine. A Monthly Review of Medicine, Surgery and the Allied Sciences. London. Southwood, Smith & Co.

Dr. Saundby has an article on "Periodical Medical Literature as a Factor in Medical Education," in which he points out the enormous service which is being rendered by the luxuriant medical journalism of the present day in furthering the progress of medicine and the education of the profession. Dr. Henry Maudsley has an ably written study of "Suicide in Simple Melancholy," in which the mental condition under which self-destruction is so often effected is analysed, and the extreme probability of its occurrence pointed out and explained. Mr. George De'ath gives an "ower true" picture of rural sanitation, and makes proposals for the better housing of the agricultural labourer. Dr. Warner contributes too short an account of the principles upon which he bases his method of studying mental action. There is an unsigned article on the Medical Profession and Practical Politics, in which the profession is urged to give up its present attitude of indifference, and its prominent members are called upon to take their share in local and imperial councils. There are a few reviews of books and some editorial notes. Altogether the *Medical Magazine* promises to be a distinct addition to our periodical literature, and one which we hope will be greatly appreciated by the medical profession.

COLOTOMY: INGUINAL, LUMBAR, AND TRANSVERSE.*

THIS book is certainly what it purports to be, viz., "a collection of the author's experiences in the various operations of colotomy, and an attempt to arrange and explain in a systematic manner the principles that guide him in his practice." It will thus be rightly inferred that the greater part of the contents will be familiar to those who have read the various papers and letters published by Mr. Allingham during the last few years.

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* Colotomy—Inguinal, Lumbar, and Transverse—for Cancer or Stricture, with Ulceration of the Large Intestine. By Herbert W. Allingham, F.R.C.S. London: Baillière, Tindall, and Cox.

In referring to the methods of performing inguinal colotomy which have been suggested of late years, we notice that no mention is made of the method of Reclus, which, from its simplicity and effectiveness, has been generally adopted by those surgeons who have once employed it.

The description of Madelüng's (not Madeling's) method is not very lucid; and that given as Verneuil's is simply a modification of Madelüng's, and in no way resembles that described by Verneuil and generally known as his method. Moreover, two years and a half ago Verneuil, the veteran advocate of iliac colotomy, publicly stated his preference for Reclus's method to his own and all others. The operations described as Mr. Jenel's and Mr. Paul's are both modifications of Madelüng's, and should have been classified as such.

Again, in the description of the operations of Lumbar Colotomy and the methods of fixing the gut when it may not have to be opened at once, it is stated that "Mr. Bryant merely draws the gut into the wound, and leaves it there unsecured;" a statement which hardly coincides with that of Mr. Bryant in his published lectures on Colotomy, page 8, viz.—"In some cases I stitch the projecting unopen bowel to the margin of the wound; in others I transfix it with long pins. The former practice seems preferable in fat subjects where the wound is deep; the latter in thin subjects where the bowel can be well drawn out."

A very graphic description is given of a procedure for finding the colon through a lumbar opening when the mesentery is unusually long, but it is somewhat disappointing to subsequently learn "that most of the details of these suggestions have been arrived at from operations on the *dead* body."

Prolapse is stated to be quite as common after lumbar as after inguinal colotomy. It is difficult to accept this statement as correct if we compare Mr. Bryant's results with Mr. Allingham's. Mr. Bryant had only one case of prolapse, and that from the distal end, in 170 cases of lumbar colotomy; Mr. Allingham reports 16 in 60 cases of inguinal colotomy. To prevent this troublesome complication Mr. Allingham considers it necessary to render the mesentery taut in every case, but although this is undoubtedly important it is not in our experience an unfailing preventive, and several of the cases recorded, notably Case 49, page 111, seem to confirm this experience. We attach quite as much importance to the wearing of a well-fitting appliance from the first.

Apart from the omissions and inaccuracies here pointed out there is much that may be read with interest and profit by the surgeon.

OUTLINES OF INSANITY.*

This book is an attempt to present in a concise form the salient features of mental disorder, arranged for facility of reference when drawing up lunacy certificates, and designed for the use of medical practitioners, justices of the peace, and asylum managers. The first chapter is a brief account of normal mentation, the senses, emotions, the intellect, and the will. The second chapter defines abnormal mentation, but the author evades the definition of insanity, and includes among his instances of abnormal mentation conditions which are strictly normal, such "as when a person sees, hears, or smells or tastes or touches something and takes it to be something else." For example, we eat beef and take it to be mutton, we drink bottled gooseberry and think it champagne; this is not abnormal mentation, but merely an error of judgment arising from ignorance or defective perception. Moreover, hypnotism and somnambulism are conditions which should not be confounded with insanity. The following chap-

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* Outlines of Insanity. By Francis H. Walmsley, M.D. London: The Scientific Press Limited, 1892.

[illegible]

[illegible]

ALCOHOL AND PUBLIC HEALTH.*

[illegible]

BUCHANAN TESTIMONIAL FUND.

[illegible]

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* Alcohol and Public Health. By J. James Ridge, M.D. London: H. K. Lewis.

Miscellany.

LINES TO A TAPEWORM.

Pale wanderer from thy native place !
O exiled prince abdominal !
I would commune with thee a space,
Thou fiend abominable.
Thou wriggler of intestinal coil,
Who tænia solium art hight,
Thou worker of so much turmoil—
Hermaphrodite !

Why didst thou dwell in human gut,
Thou chain of many links ?
Why didst thou not release thy foot
For numerous drinks ?
Couldst thou such pleasure then derive
From iliac folds replete,
Whilst there in luxury thou didst thrive,
Cestoidean beat ?

And mulishly thou didst refuse
To writhe away in flight,
And leave that mucoid, villous ooze,
Thou pallid parasite.
With household gods all round about,
Thou stayed in statu quo, I ween,
Until we quickly fired thee out
With pelletierine.

Methinks e'en then thou hadst preferred
In the duodenal home to nap.
Hadst thou not feared some doctor churl
And his worm-trap.
But now, praise Bacchus ! for thy fall
Let hallelujahs ring,
And alcohol surround thy pall
For ever, damned thing.

—*The Corpuscle*, May, 1892.

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THE

BIRMINGHAM MEDICAL REVIEW.

SEPTEMBER, 1892.

ORIGINAL COMMUNICATIONS.

ON STRANGULATED HERNIA.

BY RUTHERFORD MORISON, M.B., F.R.C.S. ENG. AND ED.
ASSISTANT SURGEON, ROYAL INFIRMARY, NEWCASTLE-ON-TYNE.

During the past three years an exceptionally large experience of strangulated hernia has drawn my attention forcibly to the subject, and as it is of great interest to all practitioners and not of uncommon occurrence, I have ventured to make a few notes bearing on the practical aspects of the matter. The first point I wish to dwell upon is the question of diagnosis.

In many cases a diagnosis is so easy as to be made by the patient unaided. The presence of a hernia is recognised; something has clearly gone wrong with it; and from this the illness arises. Generally the case is rightly interpreted by the practitioner, for he recognises that symptoms and signs of intestinal obstruction, with a tender and irreducible lump in one or other hernial region, are almost certain evidence of strangulated hernia. Yet with symptoms so plain and signs that should not be overlooked, mistakes too commonly arise, and it is not too much to say that lives are lost that should have been saved, for the percentage mortality of herniotomy must be under 5 when performed before the gut has been seriously damaged, which it may be in less than twenty-four hours; whereas with damaged gut, as will be afterwards seen, the mortality is terribly high. Every patient with strangulated hernia should be pictured mentally, stamped all over in big letters with *Delay is Death.*

It is interesting and instructive to seek an explanation of some mistakes, and I will mention some which have been impressed upon me by an actual knowledge of them. The rarest cause of failure in diagnosis—mentioned, however, in every work on this subject—is due to refusal, from feelings of delicacy, especially on the part of females, to submit to a satisfactory examination of the hernial sites, and in this way it is said a palpable swelling escapes recognition. A more common cause is that the practitioner is misled by the patient's statement that he is sure the hernia, which is always down, has nothing to do with the symptoms, as it is in no way altered, and the pain and trouble are in the belly. On closer questioning, the information may be elicited that some sudden increase in size has occurred, that the swelling is more tender than usual on manipulation, that handling it causes abdominal pain and a tendency to vomit, and that the impulse on coughing has disappeared or diminished. With such a history and signs there can be no doubt that some portion of the contents of the sac is strangulated, and that the case requires immediate surgical treatment.

Another cause of error is to regard a small tense strangulated hernia either as an inflamed femoral gland or an inflamed undescended testicle nipped in the inguinal canal. I have more than once found gangrenous gut in hernia which had been regarded as one or other of these conditions. The mistake probably arises from the book statement, made chiefly for examination purposes, that either may simulate very closely a strangulated hernia. This occurs often enough to be quoted as the striking exception which proves the rule, and when there is room for doubt, the case is one requiring immediate operation, for if a mistake *is* made it will be on the right side, and the inflamed gland or testicle will be no worse for thorough examination.

The most difficult case for diagnosis I have seen was that of a boy, 12 years of age, with a tense, tender, irreducible swelling, dull on percussion, in his right inguinal canal, with vomiting and constipation of two days' duration. The symptoms had developed after a kick in the groin, though it was doubtful if some swelling was not present before. The testicle was in its normal position. I felt no doubt that the case was one of strangulated hernia, and operated at once. On opening the swelling, about 3 drachms of blood-stained fluid escaped and the tumour disappeared. On further examination, it became clear that the case was one of inflamed encysted hydrocele of the cord, for there was no gut in the sac, which was closed in every direction, forming a cyst adherent to the cord. The patient's symptoms immediately disappeared, and in a few days he was well.

Mistakes may arise from masking of the symptoms by opium, idiosyncrasy, or gangrene. Opium may check the vomiting, relieve the pain, and stops peristalsis, lulling the anxieties of patients, friends, and doctor into a fatal calm.

Idiosyncrasy is a considerable factor in the production of symptoms. A man of robust constitution, inured to hardships, and with a nervous system well under control, may give little cause for anxiety till sudden and final collapse appears, when a more highly strung individual will have symptoms from the first, indicative of a serious lesion.

Gangrene of the gut is, however, the condition under this heading that seems to me of greatest importance, for I can find nowhere explicit recognition of the fact that a patient with gangrene of the gut may be in good physical condition and may have lost the most distressing symptoms of hernia to such an extent as to deceive everyone concerned. The explanation of this is obvious if the physiological cause of pain and vomiting, the most striking symptoms, be remembered. Dr. M. Foster, p. 461, vol. ii., writes; "That the vomiting (in obstruction of the intestine due to ligature, hernia, etc.), is due to nervous action, and not to any regurgitation of the intestinal contents, is shewn by the fact that it will take place when the intestine is perfectly empty, and may be prevented by section of the mesenteric nerves."

There are many clinical facts bearing upon and supporting this statement. Every surgeon has seen patients with all the symptoms of strangulated hernia due to strangulated omentum alone, and knows of cases of acute peritonitis which only too closely resembled acute intestinal obstruction, and of acute orchitis, attended by abdominal pain, vomiting, and obstinate constipation. Such experiences are only to be explained by attributing the symptoms to nervous action, and I will illustrate my meaning more clearly by quoting some familiar examples :—

A patient has hæmorrhoids, a large bunch has prolapsed, cannot be reduced, and is being slowly strangulated by the grip of the sphincter. Agonising pain, vomiting, and collapse are the symptoms. An anæsthetic is administered and each hæmorrhoid firmly ligatured at its base. The patient returns to consciousness completely relieved.

A case of hernia with abdominal and local pain, vomiting, and obstruction presents itself. The symptoms are sufficiently urgent to demand immediate operation. On opening the sac no bowel is found, only a portion of strangulated and inflamed omentum. This is tightly ligatured and cut off, the stumps being returned into the abdomen, and the patient has no further symptoms.

Three such cases have come under my care for operation during the period referred to, in which a diagnosis could not be made till the contents of the hernial sac had been carefully examined. In both examples a tight ligature at once destroyed the irritated nerves, thus preventing the conduction of afferent impulses.

To return to cases of gangrenous hernia, the same explanation holds good, and two cases I have recently seen made a strong impression upon me in this connection.

The first, a patient between 50 and 60 years of age, had been troubled at intervals by the descent of a hernia, which, however, he had always succeeded in reducing. One Saturday evening he was seized with urgent abdominal pains, vomiting, collapse, and obstruction. By Sunday morning the vomiting was feculent and continuous. On Sunday afternoon careful examination of the ordinary hernial sites was made, and it was stated that a finger easily introduced into either inguinal canal could feel no obstruction. Improvement commenced on Sunday evening and continued during Sunday night. On Monday he appeared well, was free from sickness or pain, and an enema had produced a satisfactory evacuation (doubtless from the large intestine). His general condition continued satisfactory, and though allowed no food—for no further evacuation of either flatus or fæces had occurred—he was well enough to be out of bed till Thursday, during the evening of which day his symptoms reappeared and steadily increased all night. On Friday morning he died; and on making a *post mortem* examination I found recent diffuse peritonitis and a small knuckle of gangrenous gut constricted by the internal ring lying at the upper part of the right inguinal canal. By the light of the *post mortem* it is easy to see that there was acute strangulation with symptoms, rapid gangrene when symptoms vanished, and acute peritonitis with return of symptoms.

The second case was a man, between 40 and 50 years of age, with a previous history very similar. On several occasions a hernia had descended and been reduced by taxis. On Sunday morning a small hernia was noticed, by the afternoon the symptoms and signs of strangulation were well marked. In the evening an attempt was made, under chloroform, to reduce it by taxis, and it disappeared During Sunday night he was sick and pained. On Monday afternoon I was asked to see him, for there had been no passage of flatus or fæces, and though he was not sick, he did not appear to be entirely relieved. In appearance I found him somewhat dejected, with furred tongue, occasional slight abdominal pain, and some tympanitic distension. On examination of the left inguinal region, slight fulness was detected, with tenderness and increased resistance. The external ring was patent, and a finger went readily into the inguinal canal. The patient's general condition was excellent, his pulse and temperature normal, and on Monday evening he walked without assistance into the next room and got on to the operation table. On opening up the inguinal canal, a small knuckle of gangrenous gut was found lying at its upper part constricted by the internal ring.

The relation of these cases introduces another difficulty in diagnosis greater than any yet considered. In neither was there any palpable tumour, and in the first nothing was discovered to suggest to any of the many competent surgeons who saw the patient the possibility of hernia. I can recall at least two additional cases in which a similar condition of things was present.

A strangulated hernia causing urgent symptoms may be present, and no palpable tumour.

With femoral hernia the same difficulty arises, and three such cases have come under my notice.

The first, a remarkably robust woman, 23 years of age, first came under my observation on the 8th day after the commencement of symptoms of acute intestinal obstruction. Two years previously a hernia had made its appearance in the right femoral region, but went back after poulticing. At the time of my visit, an ill-defined fulness was found near the right femoral ring, but no definite tumour. The patient's skin, especially that of the face, arms, and hands was of a striking livid red colour, her hands were cold, and her mind was wandering. With just sufficient ether to keep her quiet, an incision was made over the crural canal, exposing a portion of gangrenous intestine, which was at once incised A teaspoonful of fæcal mucus escaped, but no further relief followed. Next day I found on *post mortem* examination a well marked example of Littre's hernia. A gangrenous patch involving about half the circumference of the gut on its convexity. There was diffuse general peritonitis which had caused death.

The second example occurred in a woman successfully operated on for fæcal fistula, who gave the following history :—Six months before, during an attack of intestinal obstruction an abscess formed in the groin, and after a serious illness she recovered with the fæcal fistula. At the operation for the cure of this, when the intestine had been separated from its connections, it was found to have an opening in it, attached round the femoral ring, about the size of a shilling piece, on the convexity of the gut. The case was obviously one of Littre's hernia, followed by gangrene of the gut, inflammation, with suppuration of the sac, and a fæcal fistula.

In a third case, I found on *post mortem* examination a typical Littre's hernia, in which the signs were so slight as to have escaped detection during life.

In the history, when a good one was obtainable of all such cases that I have seen, there was one point which might have guarded against the mistake of missing a correct diagnosis. A hernial swelling has at some time or other previously shewn itself, once or oftener; and on reduction, with or without the subsequent use of a truss, has not reappeared for some considerable time A ready made hernial sac is present, offering no obstruction to the descent of a hernia, and a narrow neck is waiting to strangle the gut which has passed through.

With a history of previous hernia and signs of intestinal obstruction, if no fulness or increased resistance can be detected in the hernial sites, the abdomen should be opened in the middle line without delay, and exploration made from within; for it is almost certain that a strangulated hernia is the cause of the symptoms.

Treatment.—A decided course, based upon definite rules, will save the practitioner much anxiety and the patient from a grave danger. Consequently I need offer no excuse for detailing my own conclusions and the rules by which I am guided

In a recent case—one where the hernia has not been down more than a few hours and is previously uninterfered with, and in which the vomited matter is not yet fæcal in character—the patient is put to bed, the swelling and surrounding skin covered by a towel wrung out of 1-1000 corrosive lotion, and outside of this an ice bag, the whole body excepting the face wrapped up thickly in blankets and packed round with hot bottles, the foot of the bed considerably elevated, and a half-grain morphine suppository introduced into the rectum. In the majority of cases, on removing the pack after two hours' sweating, the hernia has disappeared; but if not, a *gentle* attempt may be made for a short time to reduce the hernia by taxis, which may succeed if the swelling is softer than at first, or is not very tender on manipulation, or gives any sign of yielding Nothing approaching force should be used, and decided pain should stop all further proceedings in this direction. Bearing in mind the influence of the dose of opium administered in relieving all the symptoms, the necessity for prompt and decided action in case of failure of these measures will still be apparent. A three hours' trial would be my outside limit. All preparations for operation being made, the patient is next anæsthetised, on the understanding that if taxis does not succeed, herniotomy will be done before his recovery from the anæsthesic. From what I have seen of taxis as at present performed, under chloroform, I am persuaded that it is more dangerous than herniotomy. More than once I have seen reduction *en masse* follow what appeared to be gentle and satisfactory manipulation by skilled hands. Until a safe and radical cure can be assured after operation for the relief of strangulated hernia, taxis can still claim a place in the treatment, but the manipulation must be performed with a cool and calculating head and a hand as gently used as if it was almost fearing success. In cases of any lengthy duration, or where taxis has been previously tried, the operation should be proceeded with at once.

Most complications and dangers of the operation done in proper time, such as peritonitis, cellulitis, and erysipelas, common enough in past years, are due to faulty wound treatment, and are now justly regarded as a reflection on the surgeon and his methods. No elaborate applications or medicaments are required to ensure a satisfactory course for the wound. An ordinary household can supply the necessary requirements, which are:—

Soft soap.
Washing soda.
A large saucepan on a good fire.
A nail brush.
Turpentine.
Towels.
Water.

The instruments—after preliminary cleansing with soft soap, hot water, and a nail brush—together with silk for ligatures and sutures, towels, and a nail brush, are put into the pan, covered with a quantity of soda solution (one heaped tablespoonful of soda to each quart of water), and the whole boiled for ten minutes. The skin of the patient over and around the area to be operated on is washed with soap and hot water and a nail brush, then rubbed with turpentine, and shaved and washed with soap and water again. The hands of the surgeon and his assistants are to be similarly and thoroughly cleansed, first by a thorough washing with soap and hot water and a nail brush, the nails being carefully picked and cleaned, then rubbing with turpentine, and another washing with soap and hot water. The soda solution in which instruments, etc., have boiled is then poured out into clean basins, in one of which the instruments, ligatures, sutures, etc., are kept covered by solution. A second clean basin is kept for boiled towels. A third, with soda solution, is kept for washing the surgeon's hands during operation. When all else is arranged and ready, the clothing of the patient, blankets, etc., are to be covered up by sterilised towels, by which the operation area should be surrounded and isolated.

Provided now that no one interferes with the sterilised towels and instruments except the specially cleansed surgeon and his assistants, that the prepared towels are used as sponges, that hands and all other instruments used in the wound are protected from contact with any surfaces except those thoroughly cleansed, that the prepared silk is used for ligatures and sutures and a sterilised towel wrung fairly dry as a dressing, it may be anticipated with confidence that an ordinary herniotomy wound will heal by first intention without drainage and under the simple towel dressing put on at the time of the operation.

It appears to me that only one operation is permissible in strangulated hernia. The sac should be opened, for without doing this it is impossible to know the condition of its contents, and there is no good reason why this ought not to be done. After returning the bowel, the sac should be separated, tied round its neck, and cut below the ligature, unless the condition of the bowel indicates the necessity for drainage of the abdomen.

A few more minutes are occupied over the operation, but this is more than repaid by the diminished risks of subsequent trouble. By this means the peritoneal cavity is shut off, and a possible infection spreading from the wound avoided. It is now recognised, and my own experience fully bears out the recognised belief, that the peritoneum will resist an infective dose damaging to a wound in ordinary tissues, so that if the peritoneum is closed, even though the wound go wrong, there is little chance of its being involved. Then the chance of a radical cure of the hernia is not to be forgotten.

Mr. Lawson Tait has recently suggested, and any suggestion of his is sure to attract attention, that abdominal section should be performed in cases of hernia, and the strangulated gut reduced by traction from within the abdomen. In September, 1891, shortly after Mr. Tait's recommendation had come to my knowledge, a woman, æt. 42, was brought into Newcastle from the country for the treatment of a strangulated right femoral hernia. Her symptoms dated from the previous night and were of seventeen hours' duration. A few minutes before arriving she died, and within half-an-hour after death I made a *post mortem* examination. Judging this to be an excellent case on which to try Mr. Tait's proposed method, I introduced my hand through an opening in the linea alba into the abdomen and easily found the hernia. Taking hold of the intestine above, I made steady and careful traction upon it, but before it could be withdrawn the mesentery tore, and it was evident that a dangerous amount of force had to be exerted before reduction was effected. In a second case, one of inguinal hernia in a middle-aged man, I tried to reduce the gut, *post mortem* from within and found that it could only have been done with a reasonable chance of success after notching and dilatation of the internal ring. Taking these cases into consideration and remembering the increased risk of extravasation of fæces or contaminated fluids from the sac into the abdominal cavity, and remembering the safety and efficiency of the ordinary operation, I do not think Mr. Tait's proposed change is a step in the right direction.

The ordinary operation, as a rule, is easy, though difficulties of the most confusing kind are occasionally met with. The most important difficulty in ordinary cases is that of recognising when the sac is opened and the gut exposed. The operation should be done steadily and systematically, and as soon as skin and sub-cutaneous fat are divided it is an excellent plan to nip up the covering transversely to the swelling between the thumb and a finger, by which an estimate of their thickness may be formed and satisfactory proof established that they move freely over the underlying gut. This point settled, the same fold is caught on either side by hæmestatic forceps between which it is held forwards and divided. A firm grasp is to be taken on either side in a similar way after the division of the first layers until the sac drawn forwards away from the bowel is safely opened. There is no known anatomical or other guide which tells with certainty that bowel has been reached, but it should be regarded as an aphorism that *if there is any doubt the sac is not opened.* Intestine can scarcely fail to be recognised as such, and what looks like bowel is sac distended by fluid. If the fluid is dark and bloody, the resemblance to bowel is so close that it requires a courageous belief in the truth of the above statement to make the necessary incision. In one case I made a *post mortem*, in which hernia and sac were reduced *en masse* from failure to recognise that the sac was unopened, and I have assisted at a laparotomy performed after an operation for hernia, unsuccessful from the same cause. Of others I have heard, so that this accident is not uncommon. On the other hand, I have never seen the bowel opened by mistake and only once heard of it, though of the two, this is infinitely the lesser evil, for careful cleansing followed by a continuous suture through all the coats close to the cut margin, and a few Lembert's sutures outside of this would go far towards making the latter accident inconvenient rather than dangerous.

The strangulated contents being certainly exposed, the constricting part should be fairly divided and dilated, and the contents of the sac gently drawn down for examination of the constricted portion because that is the place where damage is most likely to have been inflicted. Additional care must be taken in handling the intestine of old people, for at times, though apparently normal, it is so brittle as to tear like tissue paper. If the gut is to be returned this should be accomplished without force, and its presence in the abdominal cavity must be certified by the introduction of a finger after it. If omentum has to be ligatured and cut off, half an inch of stump should be left beyond the ligature which is to be tightly secured by, at all events, one transfixion. Care must be taken in reducing the stump not to disturb the ligature, for I have seen a case in which at the moment of somewhat forcibly reducing the omental stump the ligature slipped, free hæmorrhage followed, the wounded omentum was with difficulty recovered by forceps pushed into the abdomen, drawn into the wound and religatured; but the patient died of peritonitis, it may fairly be said in consequence of this accident, for the case was otherwise a favourable one.

As a rule the sac may be easily separated from its connections by drawing on it and stripping it out with the fingers. It should then be isolated up to a point within the ring, tied firmly round its neck with a strong silk ligature, and cut off half an inch outside of this. The ligature should not transfix the sac for this is not essential, and it may, under such circumstances act as a set on in the peritoneal cavity. The proper removal of the sac is far the most important item in the radical cure of hernia as ordinarily performed, for by it the peritoneal dimple within the ring is obliterated, and a month's rest with careful bandaging suffices to cure a fair percentage of cases. Whether or no further sutures should be introduced, or other means adopted for the more certain chance of a radical cure, will depend on the condition of the patient, and the skill, beliefs, and experience of the surgeon.

When the intestine is so much damaged as to make its recovery doubtful, a long suture should be attached to its mesentery, the constriction divided, and the bowel returned into the abdominal cavity, but retained near the ring by the mesenteric suture. A full sized glass drainage tube ought to be left beside it, keeping the canal patent and allowing of the escape of intestinal contents should rupture occur. No or few sutures should be used for the wound and the sac should be left untouched. Mr. Bennet, of London, has recorded in the *Lancet* of Oct. 18, 1890, several cases successfully treated by this means even when declared gangrene was present. Considering the unsatisfactory results of treatment of gangrenous hernia by any other known method, it will be a good rule to return the gut, and treat in this way every case in which the least hope may be entertained that complete gangrene is not present.

In an admirable paper read on the 24th March, 1891, before the Medico-Chirurgical Society of London, Mr. C. B. Lockwood discusses the treatment of strangulated hernia when the intestine is gangrenous or ulcerated. He is strongly in favour of resection of the gangrenous gut and primary suture, and suggests by the quotation of a successful case that the general condition of the patient must be disregarded. He bases his opinion chiefly on the statistics of St. Bartholomew's Hospital, which shew that 90 per cent. of patients with gangrenous gut die when treated in the simplest way, viz: by making an artificial anus.

He also makes clear a fact difficult to explain, that satisfactory relief is seldom obtained through the artificial opening, and that patients so treated usually die unrelieved, with increasing tympanites, and without peritonitis. My own experience entirely confirms the conclusions he has arrived at as to the terrible mortality; that death frequently appears to result from so called paralytic distension, and that some other method, even though more heroic than the making of an artificial anus should be adopted, for nothing could be more unsatisfactory in its results.

I have operated in five cases in which the gut was gangrenous, and in one where it was so damaged as to make its return into the abdomen impossible. The latter case occurred in an old lady, aged 72, with strangulated femoral hernia of four days' duration. The gut when exposed was much congested, and in drawing it down to examine it, the site of constriction was torn. By extending the tear and stitching it to the skin, an artificial anus was made; but judging from the large size of the valvulæ conniventes, I thought the opening must be high up in the jejunum. This proved to be the case, for though the symptoms were all relieved, semi digested food constantly escaped from the opening, and the patient died during the 6th week of inanition.

In three of the gangrenous cases I made an artificial anus. In two, both femoral, the gut was opened freely without disturbing adhesions. In neither case did any satisfactory relief occur, only the smallest quantity of flatus and fæces passing, and the symptoms remained unaltered till death occurred in each within 24 hours.

In the third case, an inguinal hernia, the patient being in excellent condition, after relieving the constriction I drew down fresh gut, stitched it carefully to the wound, and left the bowel unopened till the following day, when it was incised after careful dressing. Though the opening admitted my forefinger freely, except by pressure on the distended abdomen nothing was expelled. The vomit ceased to be fæcal in character, but sickness continued and relief could only be partially obtained by the passage of a long soft stomach tube into the bowel and the administration of salts and turpentine. The abdominal distension gradually increased and the patient died on the 8th day after operation. No *post mortem* examination was made, but as there was no rise in temperature at any period of the illness and no sign of free fluid in the abdominal cavity, it is I think fair to conclude that the cause of death was paralytic distension.

In one case, a young man in fair condition with congenital inguinal hernia, strangulated and gangrenous, I excised four inches of gut and did a circular enterorraphy.

He bore the operation well, but no relief followed and no fæces or flatus passed until his death on the 5th day after operation. On *post mortem* examination the intestine above the operation site was found to be enormously distended. No leakage had occurred and the line of suture resisted a large water pressure. There was no mechanical obstacle, for the opening between the two sutured portions of gut admitted my forefinger readily. Except for a trace of the ordinary adhesive form of peritonitis, limited to the portion of handled intestine, there was nothing further discovered.

In the fourth case, a feeble woman, 62 years of age, with gangrenous femoral hernia and in bad condition; after opening the intestine, and finding it not far from the stomach, I decided to give her the only chance and excise the gangrenous portion. The constriction being divided, the gangrenous piece was drawn down with about four inches of healthy bowel on either side of it. The constricted loop was excised and the divided ends stitched up, the continuity of the intestine being restored by making an incision over the convexity of each end, one inch from the sutured extremity and making an anastamosis by Senn's plates and Lembert's sutures. When the time came for returning the parts to the abdomen it was obviously impossible to do so without dividing Poupart's ligament, for the plates are much too bulky to go either through the femoral or inguinal rings. To overlook a difficulty so self-evident does not look well. A mention of the matter may be useful to someone equally stupid. The patient recovered well from the immediate effects of the operation, but died in a syncopal attack fifteen hours later.

Mr. Lockwood quotes authorities to prove that the mortality after primary resection is from 71 to 50 per cent., and even taking the worst figures there is a decided gain, for 90 per cent. is the number quoted as recovering after the formation of an artificial anus. If the disgusting and uncomfortable position in which the patient is left, when a successful result follows the latter, be borne in mind, and that for complete cure a severe and dangerous operation must be again undergone, it would appear that no condemnation is too severe for this form of treatment. The choice appears to me to lie between one of two methods. If the patient is too ill to bear anæsthesia for half an hour, the gut should be exposed, well washed with warm corrosive lotion (1-2000), dried, dusted with iodoform, and returned just within the ring after free division of the constriction. Drainage must be provided for by the introduction of a wide glass drainage tube left in apposition with the damaged gut, so that fæces may escape when rupture occurs. The same method should be adopted when assistance and proper appliances are not at hand. Or, when circumstances allow of it, circular enterorraphy should be performed. Of the different ways in which this is done I can only suggest that Maunsell's appears to me the best. He fixes the divided ends of the intestine together by a single suture through all the coats, one such suture being introduced on either side. Then making a longitudinal incision on the convex surface of the bowel about an inch from the point of division, he drags the divided ends through the longitudinal incision by means of the two sutures already introduced, making an intussusception of the divided bowel through this opening. The suturing is rapidly completed by passing a sufficient number of sutures, necessarily from within outward through all the coats of both divided ends, fixing them together, drawing the sutured portion back into its natural position, and closing the longitudinal incision with Lembert's stitches. Before the patient recovers consciousness completely, it is well to wash the stomach thoroughly clean with warm water in all cases where fæcal vomiting has occurred.

In the after treatment, opium should if possible, be avoided, for there can be little doubt about its favouring that fatal complication—distension.

In the matter of prognosis, there are only two points that I will mention as having impressed themselves upon me.

If the patient has a dirty tongue and is mentally depressed after the fourth day from herniotomy, even though there is no other evidence of mischief, too favourable a view must not be taken, for all is not right.

A peculiarly red moist skin with cold hands, and not necessarily a feeble pulse, in this as in other abdominal conditions means, so far as my observation goes, that the patient's chance is very bad. This condition is a very striking one, which I have not seen or heard noted anywhere, but which cannot have escaped previous observation.

THE PATHOLOGY OF THE INNOCENT TUMOURS OF THE BLADDER.

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(Continued from page 82)

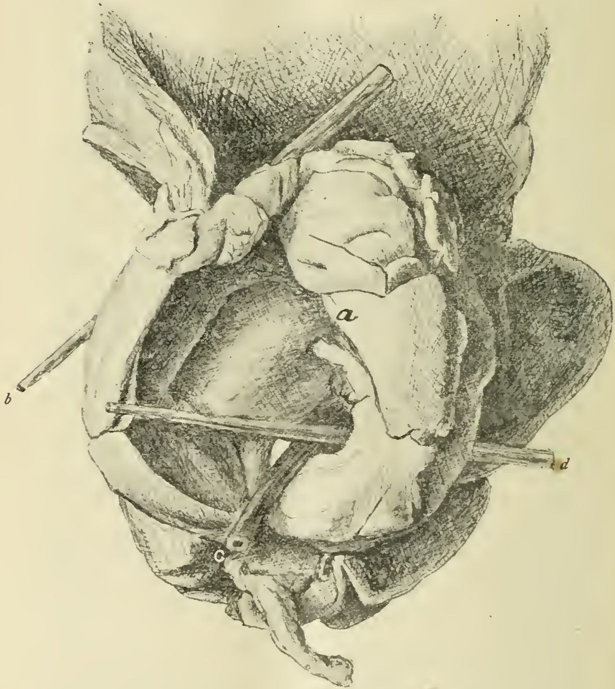
MYOMA AND FIBRO-MYOMA.

Pure myoma is of very rare occurrence in the bladder, in fact beyond Volkmann's case (*Arch Chir. Clin.*, Bd. 19), two quoted by Chiarri and Belfield and one by Lawson Tait, none are to be found recorded, unless it be one of Thompson's, No. 14 in his table of operations.

The first mentioned measured 8 cm. by 6 cm., and was attached by a pedicle to the vertex. Tait's was also pedunculated, but grew from the base, whilst the other three were either sessile or were imbedded in the bladder wall at the base. It is worthy of notice, however, that in one case of Chiarri and Belfield's the tumour though imbedded was enucleable.

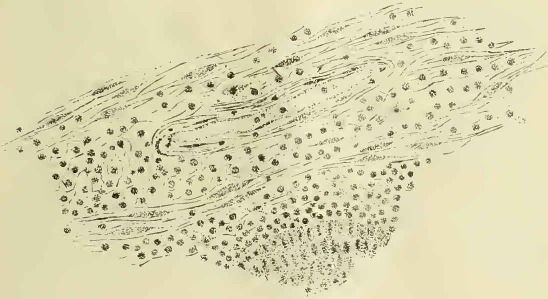
Fibro-myoma is somewhat more common, as about a dozen such growths are to be found described. An excellent example of fibro-myoma is in Queen's College, Birmingham, see drawing (No. III.).and microscopic drawings (Nos. ii. and iii.). The bulk of this tumour consists of intersecting bands of ordinary connective tissue and involuntary muscular fibre supplied with numerous blood vessels in which the walls are well developed and have a good muscular coat. The surface layers are however different, being crowded with cell growth of very diverse shapes but of connective tissue origin, and the blood vessels, which are extremely numerous, have less formed walls. Epithelium covers the tumour like that existing on the healthy mucous membrane.

Specimen 3699 in the Coll. Surg Museum is a fibro-myoma, the surface of which is ulcerated and covered by phosphates. Sections examined by me shew decussating bundles of fibrous tissue, and involuntary muscular fibre with here and there a little fat, and towards the free surface, where the vascular distribution is most luxurious, a great amount of cellular growth of varying shapes. What is the nature of this cellular growth?

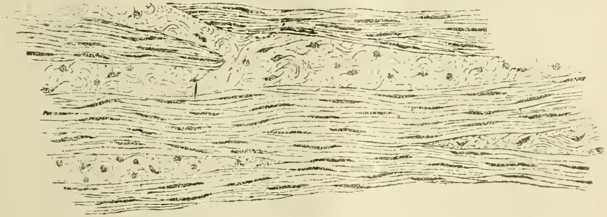


Drawing No. III.—Fibro-Myoma in Queen's College Museum, Birmingham. *a* Is placed close to the base of tumour, which is much less than the bulk of the growth. *b* Through ureter. *c* Marks catheter in the lateral cystotomy wound. *d* Passed under part of tumour which protruded into wound.

Is it evidence of sarcomatous change, or of peripheral extension or of inflammatory change? Probably of the last two, certainly much of it is inflammatory, for the small-celled infiltration round many of the vessels is remarkable, and from this all stages of fibro-blastic development can be traced, the irregularity both in shape and size of the cells forbidding the idea that they are sarcomatous elements.



Microscopic Drawing No. ii.



Microscopic Drawing No. iii.

An example of a fibro-myoma from comparative pathology is specimen 3705 in the Coll. Surg. Museum. This is an enormous growth nearly filling the bladder of an ox, and appearing to be inseparably connected with its coats, principally of the anterior wall. The naked eye appearance of the sectioned surface shews the mixed tissue of which it is composed, although from the description the differences seem to have been even more marked in the fresh state of the specimen. Whilst however the immense bulk of this tumour is made up of fibrous and muscular tissues, near the surface there is a good deal of cellular infiltration, and some doubtful in-growth of epithelium.

From which part of the muscular coat these tumours arise is often uncertain, but in the Queen's College specimen it appears to have been the internal longitudinal layer, for part of the growth can be stripped off leaving the transverse fibres intact. The attachment is rarely by a narrow pedicle; indeed in only one case is such a condition mentioned. Usually the growth is sessile and imbedded, or attached by a wide base; but reference to drawing (No. III.) shews some attempt at pedunculation, for although the base is wide, yet there is a considerable expansion in the bulk of the tumour.

The site is usually at the base of the bladder, though not so commonly so as in the other innocent tumours. In two specimens mentioned as existing in the College of Surgeons, one is from the anterior and the other from the right lateral wall. Further, the development of the tumour may be towards the external rather than towards the internal surface of the bladder, as was found in a case of Fayes' (Schmidt's Jahrbücher, 1872), where a huge fibro-myoma as large as a man's head grew from the bladder coats into the pelvis, and proved a great obstacle to the delivery of the patient, who was pregnant. This enormous size is exceptional, the size generally varying from that of a hen's egg to that of a nut.

The tumours are firm and tough on section, and have a more or less lobulated or fissured surface, though rarely does this extend so deeply as to produce multiple growths, and occasionally the solid part is covered with papillæ. Such a condition existed in Case 16 of Thompson's table, and serves to connect the fibro-myomas with the more solid forms of fibro-papilloma, the base of which contains a good deal of involuntary muscular fibre. Both sexes are affected and in about equal numbers, whilst the age may vary from infancy—two years being the youngest—to somewhat beyond the middle period of life.

Here, again, the question may be raised as to the innocent characters of fibro-myomas, just as it was in the other classes of tumours already described. The suspicion arises no doubt from the recurrence after removal, such as happened in Thompson's case No 16, and in one published by Schatz (*Arch. f. Gynaekol.*, 1876). This latter recurred twice, and was eventually completely excised with a good result. But it has already been pointed out that recurrence after incomplete removal is not sufficient to condemn a growth as malignant, in the absence of local invasion of tissues and of secondary growths. The microscopical characters of these tumours and their significance have already been commented upon.

It is here convenient to study the relationship of a class of tumours named by Sir Henry Thompson "transitional," and regarded by him as being intermediate between papilloma and sarcoma. Referring to the table at the end of his book, "Tumours of the Bladder" (1884), Cases 3, 12, 14, 16, 19 seem fair instances of such growths; all have much the same general characters, being of firm consistence, broad based or sessile, somewhat lobulated on the surface, intimately connected with the coats of the bladder and projecting prominently into its cavity.

The microscopic characters of Case 3 are described by Boyd in the *Med. Chir. Trans.*, Vol. 66. Briefly they are—"Fibrous tissue with some dense bands intersecting it; cells everywhere numerous, and in some places forming a dense infiltration. The blood vessels have distinct walls of their own; that is, they are not formed by the elements of the tumour; the surface is covered in places by epithelium; probably a loose fibroma." In the same volume may be found a report by Gibbs on Case 12, founded on examination of superficial parts of the growth. "The muscle appears normal, and there are dense bands of fibrous tissue of sodden appearance; the blood vessels in the deep parts have very thick walls, and are surrounded in places by small cells; there are collections of round cells like lymphoid cells in places, and these are arranged in round or oval masses; the epithelium on the surface resembles that of the normal bladder in every respect." The reports on Cases 14, 16, and 19 appear to be quite similar, so that it is unnecessary to give details of them.

The suspicion of sarcoma in all the cases is excited by the presence, amount, and character of the cellular infiltration; but I think a better explanation is that these all may be accounted for by the inflammatory theory, for in each instance cystitis, with its accompanying frequent and powerful contractions of the bladder, existed, the tumours being constantly exposed to irritation. Thus is explained the infiltration mentioned around the vessels and the collection of lymphoid cells in patches, which of itself is very characteristic of inflammatory conditions. The attempted development of these cells into fibrous tissue through the various stages of fibro-blasts would produce cells of very diverse shapes, such as are described and depicted in Thompson's book, whilst the author's examination of several sarcomas leads him to conclude that the cells of any particular sarcoma are generally pretty regular in size and shape. The walls of the blood vessels, well developed and distinct from the tissues of the growth, are also characteristic of innocent formations. The further history of these cases after operation also affords evidence worthy of notice; in Cases 12, 14, and 16 only is it available. In the first, a report about a year later states that the growth was not much increased; in the second, nine months later there was evidence of more rapid development; whilst the last patient was alive four years later. Although there is no doubt his tumour had augmented, yet this is hardly consistent with the original growth being nearly allied to sarcoma. It seems therefore likely that these growths are either inflamed fibromas or fibro-myomas.

There remains now for discussion a few unusual innocent growths.

Kaltenbach, in the *Arch. f. klin. Chir.*, 1884, published a case of what he calls papillary adenoma, which in its general character appeared very like to papilloma. He regarded it as having its origin in some of the mucous follicles, and describes it as consisting of numerous branching processes clothed with a single layer of long cylindrical epithelium, the whole being furnished with a large number of blood vessels with a moderate amount of small-celled infiltration around them.

Dermoid tumours occur on rare occasions. One observed by Bryant (Coll. Surg. Mus., 3707, B.), and another by Blicke and Winge (*Schmidt's Jahrbücher*, 1871) are undoubted instances, whilst in St. Bartholomew's Hospital Museum is a specimen, No. 2436, of a dermoid tumour in the bladder of a pig. Of others it appears probable that they did not originate in the bladder but simply made their way through its walls, being originally connected with parts outside it.

In both the cases above referred to the tumours were attached by pedicles, and consisted of skin with its sebaceous and sudoriparous glands, hairs, and in Blicke and Winge's case, bone and cartilage. Bryant's tumour was successfully removed but the other existed nineteen years, and eventually wore the patient out. At the *post mortem* the following interesting condition was found :—Evidence of severe cystitis all over the bladder, and on the posterior wall a tumour the size of a walnut, partly covered by long fine hairs, and having the other constituents already alluded to. The pedicle could be traced through the wall into a process connected with the right ovary, from which by some original error in the development of the bladder no doubt the dermoid structures grew.

The specimen in St. Bartholomew's Museum contains crystalline matter, fat, bristles, and a small hoof, which are said to have almost completely filled the bladder originally, but it is impossible now to say how the growth was connected to the bladder walls.

Another rare kind of tumour is one described by Langhams (*Virch. Arch.*, 1879) as a cavernous angioma. It occurred in a male, aged nineteen, who had suffered from hæmaturia for ten years, and who eventually died of it. At the *post mortem* several patches of true cavernous tissue were found in the mucous and sub-mucous coats, the cavernous spaces were lined with a regular endothelium, and no capillaries could be made out. A few thrombi were found in some of the patches.

On the authority of Ordonez (*Gaz. Méd. de Paris*, 1856), enchondroma must be recognised as one of the tumours to be found in the bladder; but his appears to be the only case in existence, unless it be specimen No. 3702 in the Coll. Surg. Mus., though perhaps chondro-sarcoma would be a more correct designation for the latter. In Ordonez's case the walls of the bladder were a good deal thickened, and in section presented a greyish white semi-transparent surface, whilst the cavity of the organ was almost filled with a brownish yellow transparent material like gelatine. Microscopic examination of the bladder walls shewed a fibrous matrix with cavities containing cartilage cells, and these last were found in the gelatinous material filling the cavity. It appears as though the tumour had undergone mucoid degeneration.

Hydatids occasionally occur in connection with the bladder, though some described as such are doubtful, and might be more correctly described as near the bladder. A case published by Ainsworth (*New York Med. Rec.*, 1880) is a genuine example apparently of hydatids in the cavity of the bladder, though there is no mention of the exact connection with the coats of the viscus. Lying free in the cavity were about sixty cysts, from the size of a pin's head to that of an orange, and there were in addition two ruptured mother cysts. The right lung and the spleen were also affected.

Habershon (*Path. Soc. Trans.*, v. 2) and Fenwick (*Path. Soc. Trans.*, v. 36) each describe a case in which a large hydatid cyst developed in connection with the external coats of the bladder and extended into the pelvis, compressing the bladder itself but not communicating with its cavity.

SECONDARY AND ASSOCIATED LESIONS OF THE BLADDER AND UPPER URINARY PASSAGES.

These lesions are so frequent and have so great an influence upon the patients' futures as to render their study a matter of great importance. The effect of tumours in the bladder upon the organ itself is almost invariably to cause hypertrophy, which frequently exists to a degree sufficient to produce some, or it may be a good deal of, fasciculation, this hypertrophy resulting directly in some cases from the tumour plugging the internal orifice of the urethra, in others from the frequent and .powerful efforts at micturition due to the mere presence of the growth, or from the cystitis caused by its existence. In those cases where cystitis has supervened upon the formation of a tumour, that is especially in the carcinomas, the mucous membrane is found thickened and sodden and of a purplish grey colour, with superficial ulcerations when the cystitis has been unusually severe. Occasionally phosphatic particles are deposited on various parts.

Sacculation of the bladder is sometimes found, but it does not always bear the same interpretation. No doubt in some instances the hypertrophy is caused by the presence of a tumour, in others it is produced by some pre-existing lesion, such as enlarged prostate (see a specimen of myo-sarcoma in the Coll. Surg. Museum). In at least three cases the sacculus was the seat of the growth, in one a sarcoma, in another a carcinoma, and in the third a fibroma. In one case, an alveolar sarcoma, the obstruction produced by the tumour caused dilatation of the urachus, and an abscess which pointed at the umbilicus (specimen No. 2,419 St. Bartholomew's Museum). A very similar condition appears to have existed in a case of fibroma under the care of Gersuny.

The destruction and perforation of the bladder walls by malignant tumour has already been alluded to *loco cit.* under the several descriptions of those growths. It is however in the ureters and kidneys that the gravest changes are found. These changes are found in some variety, but for our purpose they may be grouped into two classes, those of hydro-nephrosis and those of pyo-nephrosis. In the case of hydro-nephrosis the ureters are dilated, often to an extreme degree, so as occasionally to resemble pieces of small intestine rather than the parts they represent. The pelves of the kidneys also share in this dilation, and there is corresponding atrophy of the pyramids, or it may be even of the cortices, until the organs are reduced to mere bags of fluid, though it rarely proceeds as far as this. With these dilative changes there is associated a chronic or it may be a sub-acute interstitial nephritis. In the cases of pyo-nephrosis all the above changes are found, but the enlarged parts are found to contain pus instead of clear urine, and the kidney may be reduced to an abscess sac. At the same time, in those parts of the kidney still left, acute interstitial nephritis is found often, and in many this has advanced to a state of suppurative nephritis or "surgical kidney." Both sides are not necessarily affected in the same patient nor to the same degree; one kidney may be almost destroyed and the other left practically healthy. Further, hydro-nephrosis may be found on one side and pyo-nephrosis on the other.

As will be seen in the following tables, all kinds of tumours produce these destructive effects, and in about the same proportion.

Kind of Tumour.	No. of complete P.M.	Hydro-nephrosis.	Pyo-nephrosis.
Papilloma	33	16	12
Myoma, Fibro-myoma ...	8	3	1
Fibroma and Fibro-myxoma	10	2	4
Sarcoma	18	8	4
Carcinoma	49	20	13
	118	49	34

It is necessary to point out that these statistics are derived partly from cases dying without operation and partly from those who died after operation, but all have been rejected where no certain information was obtainable about the condition of the kidneys and ureters

Pyo-nephrosis may in this table be somewhat exaggerated in frequency, as it is likely that the suppurative process was occasionally produced by operation, that is, it supervened on what was before only hydro-nephrosis.

It will be seen that hydro-nephrosis and pyo-nephrosis existed in about 70 per cent. of the cases submitted to a complete *post mortem*, but the percentage is somewhat higher in the innocent than in the malignant tumours. This would at first sight appear somewhat anomalous, considering the bulk and the wide area of the bladder affected by the latter; the explanation no doubt lies in the much more prolonged course of the innocent growths during which they slowly but constantly produce their effects.

The difficulty of deciding whether the kidneys have suffered is necessarily the same here as in stricture, etc., but it is important to remember what a length of time some innocent tumours may exist without producing any dilatative change; for instance, Treves relates a case where symptoms had existed for thirteen years, and Pousson one for fourteen years, in both patients the kidneys being found healthy at the *post mortem.*

This dilatation of the upper urinary passages is produced in one of two ways, either by the orifices of the ureters being directly involved in the growth, or by the obstruction produced by the thickened muscular and mucous coats.

Not a few of the innocent tumours are attached near to the openings of the ureters, and although they do not directly overgrow them, yet by the position they assume, and by dragging on their attachment they act as obstructions to the free escape of urine. Occasionally the ureteric orifice may be quite occluded by a tumour, generally a malignant one.

Rarely, calculus in the kidney accompanies a tumour in the bladder, but the association is probably an accidental one. It has been suggested that renal calculus may have some influence on the production of carcinoma of the bladder, as calculus in the gall bladder has been surmised to have on the formation of carcinoma of the liver, but even if the latter supposition be true the analogy is a false one, for the conditions are reversed here, the stone being in the secreting organ and not in its reservoir.

This leads up to the question of etiology on which there is not much that is definite or certain to be said. The most important factor in the production of almost all forms of bladder tumour is age Setting aside those rare growths, the fibro-myxomas of childhood, the large majority of all others develop between the fortieth and seventieth year. Remembering then the special liability of the male sex to growths in the bladder, and the frequency with which that sex is affected by stricture, enlarged prostate, cystitis, and stone, during the period above mentioned, the importance of continued irritation of the bladder walls, as a factor in the production of vesical tumours is obvious.

When an attempt is made however to define a sufficient cause in each individual case, it generally results in failure. In less than 5 per cent. of all the patients suffering from vesical tumour did calculus co-exist, apart from such as were probably produced secondarily. Occasionally mention is made of the passage of gravel, but of what nature there is nothing to shew

Again, stricture occurred even less often than stone as a complication, but enlarged prostate was more frequently present, judging from museum specimens.

The constant impinging of a catheter on a particular part of the mucous membrane of the bladder appears to have produced an epithelioma in one case described by Hilton Fagge *(Path. Soc. Trans.*, Vol. 28). A similar cause may have been at work in at least one other instance, but in no more.

The fibro-myxoma of infancy may be regarded as favouring Cohnheim's theory of the development of a growth from "embryonic remains."

REPORTS OF CASES.

UNDER THE CARE OF GILBERT BARLING, M.B., F.R.C.S.
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Hysterical Mimicry of Joint Disease; recovery.

E. G., aged 21, female, was admitted into the hospital on April 28th, 1892, complaining of pain and swelling of the left knee and inability to walk, and of giving way of the limb if any weight were put on it. Her history was as follows:—Some time during the previous summer, when walking, her knee suddenly gave way, and she fell down striking the knee-cap, but she was able to walk home afterwards. During the next fortnight the knee was swollen, red, and painful, and was kept at rest on a splint, and gradually became serviceable again. At Christmas, 1891, a similar accident befell her, and she was confined to bed for a time, the joint being splinted and treated with some form of cautery, and though improvement followed, the patient was unable to use the limb, and went about with crutches and with her leg in a case. On two different occasions a trocar and cannula were put into the joint, but nothing escaped, although on one occasion the cannula appears to have been left *in situ* for some hours.

On admission, the limb was fixed in a case in the extended position. It was not perceptibly hotter than its fellow, nor was there redness or œdema over it. Superficial tenderness was very marked, but deep pressure, if the girl's attention was occupied, was well borne. The joint looked rather coarser than its fellow; but this was apparent, not real, for measurement shewed that the two were the same size, and the appearance was doubtless due to the fact that the lower part of the thigh was wasted, measuring a quarter to half an inch less than its fellow. This was the only measurement in which the two limbs differed. Any attempt at flexing the joint was strenuously resisted, and appeared to give rise to severe pain. Two other points need mention—the girl was well nourished, and when carefully observed was found to sleep well, although before admission it was stated that there was much pain in the joint at night The family history was good, being free from tubercular or rheumatic tendency. The patient was engaged to be married.

The diagnosis made was slight traumatism to joint with hysterical mimicry of arthritis added, a combination not uncommonly seen; in fact it appears to be more common than mimicry without injury—a fact which it is important to bear in mind, as the history of a slight injury often misleads the surgeon in charge of the case.

Treatment.—For the first few days the limb was massaged, and then in a few days flexion of the joint was commenced. At the end of a fortnight the patient was directed to get up and put some weight on the limb, and then to actively move the joint. At the end of five weeks she was discharged, walking perfectly without pain or hindrance and with joint movements quite free.

One cannot help commenting on the fortunate escape from mischief following the punctures of the joint with a trocar and cannula.

Tubercular glands in the Axilla; excision.

A. P., male, aged 15, was admitted into hospital, June 17th, 1891, with a mass of glands occupying the whole axilla, from the floor, which was bulged by them, to the margin of the clavicle. Some of them were commencing to suppurate and involve the skin.

The history was as follows: when nine years old the patient had a finger of the left hand crushed in a wringing machine, and this injury was followed by swellings at the elbow and at the axilla, both of which appear to have suppurated, and scars were left. During last winter the boy had chilblains on his left hand, and three months before admission to hospital he noticed a swelling in the left armpit. There was no tubercular history in the family.

Operation.—The axilla was cleared out through the usual incision in the floor, the glands were found closely matted together and varied in size from a bean to a walnut, and many of them were advanced in caseation. There was some trouble in separating a few of the glands from the axillary vein, but this was managed without injury to the latter, and before the dissection was completed my fingers had crept up beneath the clavicle into the root of the neck. Drainage was used, and the wound was healed in a fortnight without any suppuration.

The case is recorded from the unusual position of the tubercular glands, all other parts of the body being apparently free from them. The explanation is to be found doubtless in the point of infection, which probably was through the chilblains on the fingers of the left hand, as the old glandular mischief following the injury six years before seems to have completely healed. In the region where tubercular glands are far most common, viz., the neck, the point of infection is usually some small unrecognised lesion within the mouth.

Extravasation of Urine from stricture following amputation of the Penis.

A. P., male, æt. 41, had been the subject of a tight prepuce all his life, and in Sept., 1891, was much troubled with irritability and discharge from under the prepuce. In January, 1892, he was circumcised and a growth was discovered on the glans penis. This was warty in character and rapidly increased in size until it was removed by amputation of the penis a little way behind the growth early in February. For about a week there was no trouble with the urine, but then he had to strain in micturating. The narrow orifice was dilated and micturition rendered easier for a time, but the old difficulty returned, and about ten days before admission to hospital the stream was very small, and a swelling was noticed on the left side of the scrotum. This extended and spread over the whole scrotum.

When admitted, the whole scrotum was swollen to the size of a child's head, it was œdematous and painful. The swelling extended backwards to the perinæum, but did not involve the abdomen or thighs. On the left side of the scrotum the skin was just commencing to slough. The orifice of the urethra was extremely contracted and a probe could only be passed for about half-an-inch down it.

Treatment.—Incisions were at once made into the scrotum, and pus and urine evacuated and a free median incision was also made into the perinæum, but owing to the patient's general constitutional disturbance the strictured meatus was left to be dealt with later. The relief of the stricture was a little tedious as the mucous membrane had retracted three quarters of an inch into the stump of the penis, and was puckered to the right of the middle line. The corpus spongiosum was separated for three quarters of an inch from the rest of the penis, split on its roof and floor, and stitched back with the mucous membrane everted so as to prevent recontraction if possible. The rest of the penis was then trimmed off just in front of the scrotum. When discharged, the new meatus was quite patent, and the patient was provided with a short metal bougie to keep it so, which he has done up to the present time.

At the time of admission to the hospital, it ought to be mentioned that the glands in each groin were considerably enlarged, and it was difficult to say whether the enlargement was due to infection from growth, or to the inflammatory condition of the scrotum, they were therefore left alone to see what their fate would be after the relief given by the incisions. Fortunately, they then subsided, appearing to be simply enlarged by inflammation and not by growth.

Popliteal Aneurism, ligature of superficial femoral by the "Stay-Knot"; cure.

The treatment of popliteal aneurism by ligature of the superficial femoral artery is so satisfactory in its results, that record of a case is not worth making unless there is some unusual feature in it. The present case is only described because the lines laid down by Ballance and Edmunds in their book, recently published, have been followed, and as it would have been one's duty to have recorded any mishap which followed, so it seems also a duty to record a case in which the result was satisfactory.

W. K., male, aged 42, was admitted to hospital on April 21st, 1892, with a pulsating swelling in the popliteal space. The patient stated that he first noticed a swelling in the ham five weeks before and attributed it to walking a good deal. From the time the swelling was discovered the man lay in bed, but the swelling steadily increased. He had been a soldier, serving in India for some time, living a hard life, drinking a good deal but not acquiring syphilis as far as he knew, though he contracted gonorrhœa.

Condition on Admission.—The patient was a spare man looking much older than his age. In the left popliteal space was a a pulsating swelling the size of a large orange. Over this, especially at the upper part, a see-saw bruit could be heard; the pulsation was expansile in character. Measurements of the limb: six inches above the patella both limbs were the same; around the middle of the patella the left side was two inches larger than the right; and around the calf the left side was an inch bigger than the right. The lungs were emphysematous, and the heart sounds were very feeble.

Operation, April 27th, 1892.—The usual incision was made for ligature of the superficial femoral artery at the apex of Scarpa's triangle and the vessel was easily exposed. The method of tying was that advocated by Ballance and Edmunds, under the name of the stay-knot, for the adoption of which they urge the following reasons: that by the ordinary reef-knot the walls of the vessel are partly divided, and therefore left weaker than they were before, and so secondary hæmorrhage is pre-disposed to, and that occlusion of the vessel can be attained without this damage to the vessel walls.

This occlusion, however, they say, is not to be secured by any of the knots formerly in use, because, if the first half of the knot is not tied so tightly as to divide the inner and middle coats, it will slip before the second half is tied, and the vessel will not be obliterated. Their method is as follows: the aneurism needle is passed in the usual way and threaded *in situ* with any material desired, and then withdrawn, both portions of the thread being of equal length so that the vessel is really surrounded by a double ligature, both halves of which are used in the following way:—Tie the first half of the reef-knot on each thread separately with very slight force, then take the two threads together, tighten them gently on the vessel and use both threads together to complete the second half of the reef-knot. It is argued that in this way the knot may be tied with less force and no division of the vessel walls occur, whilst at the same time there is security that obliteration will follow. After the first halves of the two reef-knots have been tied loosely and they are taken together and very carefully tightened, the two half-knots lying absolutely close together side by side so mutually support each other that the second half of the knot may be completed in a leisurely manner without any fear of the first halves slipping and allowing the circulation to be restored.

As far as the experience of once using the knot goes, it seems to fulfil the requirements of its inventors. There was no perceptible giving of the vessel walls, nor any relaxation of the first half-knots before the second was completed.

The wound was closed without drainage, and it healed by first intention. The aneurismal pulsation ceased at once and permanently, and the mass is steadily shrinking, whilst the patient has resumed his work of house painting.

PERISCOPE.

REPORT ON RENAL AND URINARY DISEASES.

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BRIGHT'S DISEASE.

On Renal Dropsy, with especial reference to the circulation, together with some considerations relating to pulmonary apoplexy in renal disease.—By W. H. Dickinson, Royal Med. Chir. Soc. (*Brit. Med. Jour.*, 1892, vol. i., p. 910).—Dropsy results from the presence of too much fluid in the lymph spaces; either too much is poured out or too little is removed. Fluids are passed out of the capillaries by filtration, diffusion, and (?) by secretion. In acute nephritis dropsy is probably due to some abnormality of blood which hinders its passage in the capillaries and promotes transudation. But in chronic nephritis the dropsy lessens though the arterial tension increases. The increase of the amount of urine does not suffice to explain the absence of dropsy, as there may be dropsy in diabetes. The cardiovascular changes of chronic Bright's disease are antagonistic to dropsy. When the heart dilates, dropsy recurs, and pulmonary apoplexy takes place in consequence of mitral incompetence.

In the discussion which followed, Sir G. Johnson expressed the opinion that renal dropsy is an active secreting process of the epithelium of the vessels brought into action by the accumulation of noxious substances in the blood. Dr. Pye-Smith thought the early dropsy of renal disease was an "inflammatory effusion, the result of an active inflammatory change in the connective tissues affected." Dr. Douglas Powell thought osmosis was at any rate a factor in the production of renal dropsy. Dr. Sansom quoted some experiments of Wooldridge's to shew that by injecting some lymph product into the circulation dropsical transudation could be induced. Dr. Haig considered that the contraction of the capillaries was due to uric acid in the blood. Dr. Lazarus-Barlow recognised two causes: 1, Damage to the capillary wall from deleterious substances in the blood; 2, diminution of blood pressure in the capillaries from contraction of the arterioles.

Hæmorrhagic Nephritis, or blood tumour of Kidney (?Hæmonephrosis.)—By Thomas Oliver (*Brit. Med. Journal*, 1892, vol. i., p. 647).—This was the case of a young unmarried woman, aged 23, in whom hæmatomata formed in various places, finally in the right kidney, which was distended to the size of a cocoanut; the left kidney shewed marked interstitial nephritis. (The above names seem all ill chosen, as the case was one of contracting kidney with hæmorrhages, such as are by no means uncommon.)

The Dyspnœa of advanced Bright's Disease.—By Graham Steell (*Med. Chron.*, vol. xv., p. 8).—The author contends that the dyspnœa of advanced Bright's disease is cardiac in origin, and due principally to failure of the heart. He puts this proposition in opposition to the ordinary view that this condition is toxæmic, and he supports it by the evidence of the results of treatment, *e.g.*, the benefit derived from the use of nitrites. He recommends carefully regulated low diet, frequently repeated saline laxatives, and the administration of heart tonics, digitalis and strophanthus, with caffeine as a diuretic. In the treatment of the paroxysm of dyspnœa he suggests the careful use of morphia hypodermically. (The chief argument in favour of this theory is the success of the nitrites, which can only act by reducing peripheral resistance and thus aiding the heart, but the author—in common we may say with the reporter,—speaks of this treatment as not so serviceable as he anticipated, and as having caused him a certain amount of disappointment, so that his major premiss seems to be weaker than it ought to be to stand the weight of his conclusion.)

Urémie fébrile.—By H. Gillet (*Revue de Méd.*, 1892, p. 163).—The author publishes the notes of a case of contracting kidney in a male aged 28, admitted comatose, where the temperature reached 41° C. (105·8 F.) before death. There was no pneumonia or cerebral hæmorrhage.

Ueber die secundären Veränderungen der Kreislaufsorgane bei Insufficienz der Nierenthätigkeit.—By O. Israel (*Berl. klin. Woch.*, No. 19).—Israel states in consequence of insufficiency of the renal functions, hypertrophy occurs not only in the left ventricle, but in the right also, and that in addition the larger arterial trunks shew evident destruction of their elasticity, the aorta undergoes "conical dilatation," and the smaller vessels dilate, become tortuous, and lose their muscular elements. The spleen, pancreas, supra-renals, and kidneys themselves, frequently become indurated and cyanotic, so that renal insufficiency leads to active arterial congestion, partly mechanical, partly toxic. The secreting power of the renal parenchyma is too small for the urinary substances requiring elimination; hence the overtaxing of the arterial vascular system. The same state of things exists in drunkards and diabetics. The cardiac hypertrophy is in all these cases a compensatory phenomenon to fulfil the increased demands for the excretion of the toxic products of tissue metamorphosis.

Ein Fall von totaller cystöser Degeneration beiden Nieren beim Erwachsenen, nebst Bemerkungen zur Klinik dieser Erkrankung.—By C. A. Ewald (*Berliner klin. Wochenschr.*, 1892).—Ewald has recorded a case of a woman, aged 60, who complained of dyspeptic symptoms, and died a few days after. The urine was free from albumen. At the *post mortem* examination both kidneys were found to be only slightly enlarged, but entirely converted into cysts containing fluid and stones, the nucleus of one of which was pure uric acid. Such parts of the kidney as were not cystic, presented old and recent inflammatory interstitial change. He thinks such cases can only be diagnosed when the kidneys can be felt, and when albuminuria persists for years without severe nephritic phenomena. Cystic kidneys present themselves clinically under the appearance of contracting kidney, or with no symptoms at all which would suggest renal disease, but vague troubles, which may perhaps be traced to chronic uræmia, or with positively no symptoms whatever. The etiology of such cases is obscure, but Ewald thinks this case was due to the formation of retention cysts in consequence of the presence of urinary calculi in the tubules, the sclerosis being a secondary condition. The heart was not hypertrophied, but was small and soft.

DIABETES.

Two cases of Pancreatic Diabetes.—Vaughan Harley (*Brit. Med. Journ.*, 1892. Vol. i., p. 9).—Case 1. Y. K., aged 23, medical student. After an attack of catarrhal tonsillitis, he developed thirst and polyphagia, and his diabetic condition was discovered. Great weakness. Drowsiness. Urine 140 to 212 oz.; sugar 2 per cent. Death after eleven days. Head of pancreas swollen, containing abscess the size of a cherry; tail atrophied. No tubercle bacilli in abscess. The connective tissue of pancreas was increased and the parenchyma fatty.

Case 2. Male, aged 64, banker; paternal uncle died of diabetes. In 1882, suffered from boils and was found to be diabetic, sugar 1 per cent. In 1883, sugar 5 per cent., Carlsbad cure, sugar reduced to 0·5 per cent. Next year sugar 7 per cent., Carlsbad cure, sugar reduced to 0·5 per cent. In 1885, sugar had again increased, so he returned to Carlsbad and sugar was reduced to 1 per cent. Complained of thirst. No loss of flesh. In 1886, loss of appetite, wasting, increase of sugar, return to Carlsbad in summer without benefit. Development of irregular tumour in abdomen between ensiform cartilage and umbilicus; appearance of fatty stools, jaundice, death. *Post mortem*, body wasted, deeply jaundiced. Fluid in pleural and peritoneal cavities. Some peritonitis. Cancerous degeneration of head of pancreas.

Diabetes mellitus and lesions of the pancreas.—By R. T. Williamson (*Med. Chron.*, Vol. xv., p. 367).—Two cases of diabetes are related, in which pancreatic lesions were present. Both patients were emaciated; in one the pancreas had undergone marked interstitial inflammatory wasting, in the other there was fatty degeneration of the parenchyma. He adduces the experimental evidence in favour of the influence of the pancreas in the production of diabetes, and tabulates 100 cases collected from medical literature in which pancreatic lesions were present.

One hundred cases of pancreatic lesion in diabetes :—

Atrophy of pancreas (more or less marked)	39
Very marked atrophy, gland almost absent	3
„ „ „ gland not recognised by naked eye	2
„ „ „ with cystic dilatation of duct	2
„ „ „ and induration	1
Calculi present, other conditions not stated	1
Marked fatty degeneration	10
„ „ „ with calculi	3
Fatty degeneration with increase of connective tissue	1
Complete fatty degeneration and marked atrophy	1
Complete transformation of pancreas into a fatty mass	2
Cystic disease	3
Large pancreatic cysts	3
Cyst of pancreas with necrosis	1
Transformation into a firm mass of fibrous tissue, pancreatic tissue being almost absent	10
Marked cirrhosis	3

Cirrhotic and cystic pancreas	1
Calcified pancreas	1
Peripancreatitis and pancreatitis hæmorrhagica ...	2
Abscess	3
Cancer	8
	100

He suggests that if we could diagnose pancreatic disease, we might cure it by implanting portions of living pancreas under the skin.

Diabetes after Extirpation of the Pancreas.—By Minkowski (*Berl. klin. Wochenschr*, Feb. 1st, 1892.)—Minkowski says that the complete removal of the pancreas in dogs is always followed by diabetes if the animal lives long enough; in cats the effect is the same; in rabbits complete removal seems to be impossible. In a pig two-thirds of the pancreas were removed, and five days later glycosuria occurred after a meal of bread. It diminished after meat, and disappeared after fasting for a day. Pancreatic diabetes cannot be produced in birds and frogs as in dogs. In the latter, sugar appears in 24 to 48 hours, and reaches its maximum in two or three days. The sugar may disappear before death, when strength is failing and complications set in. By grafting pieces of pancreas in the tissues outside the abdominal cavity the development of diabetes may be hindered. He draws attention to the rapid disappearance of glycogen from the liver after the extirpation of the pancreas, and to the fact that lævulose can still be assimilated.

Zur Etiologie des Diabetes mellitus.—By Teschemacher (*Berliner klin. Wochenschr.*, 1892, No. 2.)—Teschemacher relates the case of a boy of 7, who was attacked by a dog without being actually hurt; after the fright his urine contained 3·3 per cent. of sugar, on the following day it was 2·4 per cent., two days later 0·15, and eight days afterwards quite free from sugar. The author thinks this case proves that mere psychical disdisturbance may give rise to considerable glycosuria, as has been several times observed and described.

Diabetic Zona.—By P. Vergely (*Le Progrès Méd.*, Sep. 26th, 1891.)—The author gives notes of several cases of zona occurring during the course of diabetes, and insists upon the relationship of these conditions.

Die Erkrankungen des Auges bei Diabetes mellitus.—By Seggel (*Münchener med. Wochenschr.*, 1891, No. 43) —Cataractous degeneration of the lens is the most common lesion in diabetes, but next to this is diabetic retinitis, retinitis centralis punctata, and retinitis hæmorrhagica; the former is characteristic of diabetes. A common initial symptom of this affection is paralysis of accommodation with or without mydriasis, with paralysis of the external ocular muscles, atrophy of the optic nerve, and amblyopia without apparent lesion.

Neuritis diabetica und ihre Beziehung zum fehlenden Patellarsehnenreflex.—By Eichhorst (*Virchow's Arch.*, cxxvii., 1, p. 1, 1892).—Nonne examined the crural nerve of a case of diabetes in which the knee-jerk was absent, and reported that it was healthy, but Eichhorst has found it degenerated in two cases. In neither was there anæsthesia or paralysis. He thinks that at first the nerve is only poisoned, but that after prolonged or intense action of the poison, visible injury to the nerve fibres takes place.

The Antifermentative and Therapeutic Effects of Jambul.—Hildebrandt (*Berl. klin. Woch.*, January 4th, 1892).—Hildebrandt, like others before him, has found that jambul has a decidedly hindering action on plant diastase and on the sugar-forming ferments of blood serum, saliva, and pancreatic extract.

H. Henricks (*Inaug. Diss. Giessen*).—Henricks has used jambul in the form of powdered seeds and bark and decoction, but its results were negative or even harmful.

C. Raimondi and U. Rossi (*Gazz. Med. Lombarda*, January 16th, 1892).—The authors relate the case of a woman, aged 58, treated by dieting and jambul with benefit. She presented the three symptoms of polydipsia, polyphagia, and polyuria, and was much wasted. On suitable diet she improved, but the sugar remained abundant. She was then given jambul, beginning at 1·5 to 2 grammes daily, and reaching as much as 12 grammes or more, for a month, it was then discontinued. During its administration the sugar sank to half, but on leaving it off rose again, decreasing when the drug was resumed.

Aleuronat as a food for diabetics.—Ebstein (*Deutsche med. Wochenschr.*, May 12, 1892).—Ebstein says that Gluten bread has gradually come to be less used, especially in Germany, and a small quantity of ordinary bread up to 100 g. is allowed in preference. Hundhausen was the first to introduce the vegetable albumen known as aleuronat, and prepared from wheat. It is a dry powder, yellow in colour, and without taste or smell. It never contains less than 80 per cent. of nitrogenous matters, nor more than 7 per cent. of carbo-hydrates. It may be used in the place of flour for making soups, sauces, etc. He has, however, succeeded in making a very satisfactory bread with it, which contains in the dry substance 66 per cent. of nitrogenous matters. Thus a diabetic, in taking half a pound of aleuronat bread containing in the dry substance even 50 per cent of nitrogenous matters, gets 80 g. of vegetable albumen and only 72 g. of carbo-hydrates. Thus he can obtain a comparatively large quantity of the needful albumen from vegetable albumen in the same way as individuals in health.

Sull' acetonuria sperimentale.—By A. Luskig (*Lo Sperimentale*, Vol. xlv., p. 435). *Sull' acetonuria e glicosuria sperimentale.*—By R. Oddi (ibid. p. 458); *Sugli effetti dell' estirpazione del plesso celiaco* (ibid. p. 475).—Luskig has shewn (*Arch. per le sc. med.*, 1889) that after the extirpation of the cæliac plexus in the dog and rabbit, acetone appears constantly in the urine, and this is accompanied in some cases by transitory glycosuria. The acetonuria is attended by wasting, low temperature, and failure of nutrition. In those animals which survive the operation, after some time the acetonuria ceases and health is reestablished; hence he concludes that this plexus is not essential to life, and that some other structure can supply its functions. In other animals death occurs suddenly from acetonæmic coma. The lesions found are the changes described by Armanni in the kidney of diabetics. He has also shewn that electrical excitation of the plexus causes frequently slight transitory glycosuria and always acetonuria, with rapid wasting. Negative results followed removal of the superior and inferior cervical ganglia, but removal of one or both splanchnic nerves or extirpation of the abdominal aortic plexus, is followed by slight transitory glycosuria and acetonuria. Divers lesions of the central nervous system also produce these effects; for example, lesions of the medulla oblongata constantly give rise to glycosuria and transitory acetonuria, the latter sometimes very grave, and always more persistent than the former.

Oddi has confirmed the effects of extirpation of the cæliac plexus in the dog, and draws attention to the inverse relations of the glycose and acetone, the latter disappearing and increasing in proportion as the glycose disappears. Lesions of the medulla oblongata made through the cerebellum produce the same effect with similar relations of glycose and acetone, with albuminuria, which follows the development of acetonuria, and is dependent upon the irritation set up in the kidneys. He has observed the same in the other lesions of the central nervous system, and attributes them to the irritation which follows all severe lesions of nerve structures, whether central or peripheral

Ueber ein bisher nicht beobachtete Zuckerart im Harn.—By E. Salkowski and M. Jastrowitz (*Centrlbl. f. d. Med. Wiss*, 1892, No. 19).—The authors have recently had under observation a urine which gave, on treating with caustic soda and copper sulphate, a tardy but still copious precipitate of cupric oxide: but gave negative results on fermentation and polarisation. It was obtained from a man, aged 29, addicted to morphia, and was passed during his cure by abstinence so long as the observations were continued. On some days the urine contained as much as 0·8 per cent. of sugar, which not only reduced copper but fermented with yeast, and shewed right-sided polarisation; but these specimens were not the subjects of further examination.

The urine, on treating with phenyl-hydrazin and sodium acetate (for at least 1½ hour), yielded very characteristic osazon, as much as 3 g. were obtained from 100 ccm. of urine. This osazon differed from phenylglucosazon by its melting point, as well as by its relative solubility in hot water, from which it crystallised out, while the phenylglucosazon of grape sugar is quite insoluble in water. These crystals were lemon coloured, microscopic needles of silky appearance, melting at 157-158, on recrystallisation, 159, but not more. Of these carbohydrates there are known three: osazon, whose melting point is from 158 to 160; arabinose, xylose and β-akrose, a substance formed synthetically by E. Fischer and J. Tafel from akolein-bromide. None of these have hitherto been found in animal substances. Arabinose may be excluded, because it polarises light strongly to the right, while the urine was optically inert or perhaps very slightly right-sided. Whether it was xylose or β-akrose, or another carbohydrate, must be determined by further investigation.

The relations of osazon are so characteristic that the new carbohydrate is easily found in the presence of grape sugar. Twenty cubic centimetres of the liquid in question and an equal quantity of diabetic urine, containing 0·8 per cent., were mixed, heated with phenyl-hydrazin and sodium acetate, and the resulting osazon treated with about 45 ccm. of hot water; a part dissolved, a part did not. The insoluble portion melted after drying at 200°, while the solution gave osazon in needles melting at 172°. The melting point of the insoluble portion rose on purification to 203° (the melting point of phenylglucosazon is from 204 to 205°), the melting point of the soluble osazon diminished by re-crystallisation from hot water to 165°, which is near the melting point of the new carbohydrate. For control purposes 20 ccm. of the same diabetic urine were mixed with 20 ccm. of normal urine, but only a very small quantity of soluble osazon was found, which melted at 187°. These observations are of importance to the validity of the phenyl-hydrazin test for sugar in urine and other fluids. It is no longer possible to conclude from the presence of a rich formation of crystalline needles of osazon that grape sugar is present. It is probable that further investigation will shew that this substance is present in many other urines.

Eine Reaction auf Traubenzucker.—By O. Rosenbach (*Centrlbl. f. klin. Med.*, 1892, No. 13).—A solution of grape sugar (or lactose) treated with a few drops of caustic soda and a few drops of cold saturated solution of nitro-prusside of sodium and boiled, gives a deep reddish brown or orange red colour; it is distinct in the presence of one-tenth per cent. sugar, and gives a dark yellow with a dark band in the red of the spectrum. The same colour reaction is seen in urine, but it must not be confounded with the red colouration which urine always gives with nitro-prusside of sodium and caustic soda in consequence of the presence of kreatin. On acidulation, saccharine urine becomes bluish, while non-saccharine urine turns only a greenish colour. Rosenbach recommends the method as applicable for an approximate quantitation test.

Ueber Pneumaturie in Allgemeinen und bei Diabetes mellitus insbesondere.—H. Senator (*Internat. Beitr. z. wissensch. Medicin. Festsschr z. Virch. Jub.*, iii., 1891).—Senator draws attention to a case of the development of gas in the urinary bladder of a diabetic, originally observed by Fr. Müller. The latter found the gas to consist chiefly of carbonic acid gas, hydrogen and nitrogen, with slight traces of oxygen and carburretted hydrogen. There occurred also a lactic acid fermentation of the sugar. When Senator saw the case, the pneumaturia had disappeared, the urine was always very turbid, acid, contained pus corpuscles and traces of albumen. Some specimens developed CO_2 without the addition of yeast, others did not. In another case the patient had cystitis as well as pneumaturia. The urine was never ill-smelling, but sometimes offensive after fermentation with yeast, acid, very turbid, containing pus cells, yeast cells, and a few squamous epithelia. Fermentation of the urine occurred without the addition of yeast, the gas formed being CO_2, and the fluid containing alcohol. So that in this case there was an alcoholic fermentation of the sugar. Senator also draws attention to the cases in which sugar has disappeared from the urine when cystitis was present.

A Simple Instrument for the Quantitative Estimation of Sugar in the Urine.—Scott (*The Lancet*, 1892, vol. i., p. 144).—This is a description of a simple little instrument designed by Dr. Edgar Gans, of Carlsbad, and sold by Fiebig, Alexandrinenstrasse 27, Berlin, for estimating the amount of sugar by means of fermentation. It is said to be very inexpensive and sufficiently accurate.

On some Sources of Error in Testing for Sugar in the Urine.—George Johnson (*Brit. Med. Jour.*, 1892, vol. i, p. 759).—The author points out the well-known fallacies of the ordinary tests, and insists on the superiority of the picric acid and potash test introduced by him.

On the Volumetric Determination of Uric Acid in Urine.—F. Gowland Hopkins (*Guy's Hospital Reports*, Vol. xlviii., p. 299).—Hopkins recommends the separation of uric acid from the urine by complete saturation with ammonium chloride, when the uric acid may be estimated gravimetrically with ease and accuracy. But he suggests that a somewhat less accurate but sufficient method for clinical purposes is to estimate the uric acid so separated by tritration. The ammonium urate is decomposed by the addition of strong sulphuric acid and a standard solution of potassium permanganate tritrated immediately until a faint pink colour is produced, when the quantity employed is read off, each ccm. of permanganate being equal to ·00375 grm. of uric acid. Those who wish to employ this plan should refer to the original paper for details of the method by which the ammonium urate is separated.

Ueber Nucleoalbuminausscheidung im Harn.—By F. Obermeyer (*Centrlbl. f. klin. Med.*, xiii., I., 1892).—The proteid bodies precipitated by acetic acid form three groups: 1. true mucins; 2. nucleins; and 3. nucleoalbumens. Mucin and nucleoalbumen are found in the urines of sick and healthy persons; nuclein is not. It is doubtful whether the mucin is excreted by the kidneys or bladder, or whether it is always due to irritation of Cowper's and Littre's glands. Nucleoalbumens are found in the urine under very variable conditions: in leukæmia, icterus, acute infectious diseases involving the kidneys (scarlatina, diphtheria), cystitis, etc.

Obermeyer has investigated this subject, and concludes that there is a renal and vesical nucleoalbuminuria, but a hæmotogenous form is questionable; renal nucleoalbuminuria is caused in scarlatina by injury to the renal epithelium, particularly that of the medulla, a fact which has clinical and perhaps also diagnostic interest.

Eine empfindliche Reaction auf Eiweiss im Harn.–By E. Spiegler (*Wiener klin. Wochenschr.*, 1892, No. 1).—The author recommends a solution of 8 parts mercuric chloride, 4 parts tartaric acid, 20 parts sugar and 200 parts water. The presence of albumen is shewn by a cloud at the junction of the layers of fluid. Urine, which is alkaline, or contains mucin, should be previously acidulated with acetic acid. Normal urine gives no reaction. It is so delicate as to detect one in 50,000 parts of egg albumen. Pepton gives no reaction, but albumose perhaps does. The sugar is added to increase the sp. gr. of the solution so as to prevent its mixing with the urine.

MISCELLANEOUS.

A new reagent for albumen.—A. Jaworowski (*Wiadomosci Farmaceutyczne*, November 1, 1891) proposes a new reagent for albumen which detects the presence of $\frac{1}{300000}$ part of albumen. (The other known reagents, as, for instance, Bödecker's, Millon's, acetic acid, and others, do not detect even the $\frac{1}{60000}$ part.) The reagent is prepared after the following formula:—One part of molybdenate of ammonium is heated with 40 parts of water, and afterward mixed with 5 parts of tartaric acid, when, if the liquid is not clear, it must be filtered. For examination, the urine must be transparent and acid; if it is necessary to acidify it, tartaric acid is used. For the complete removal of albumen from the urine, add a few drops of the reagent and filter it; after filtration, add the reagent again, and so on till a precipitate ceases to be thrown down. Too much reagent must not be used at once, because the excess may redissolve the albumen. By this reagent, also a very small quantity of mucus may be detected.

Eine Tritirmethode zur Bestimmung der Schwefelsäure im Harn.—By E. Freund (*Wiener klin. Wochenschr.*, 1891, No. 51).—Freund's method depends upon the fact that when a watery solution of baryta is added to a liquid containing sulphates and alizarin sulphonate of soda, the baryta combines first with the sulphates, and after they are all thrown down, with the alizarin salt forming a purple red precipitate adhering to the sulphate of baryta, and nearly insoluble in acetic acid. In order to estimate the amount of sulphates in a urine, we must add ten drops of a 1 per cent. solution of alizarin to 50 ccm. of urine, and drop in 5 per cent. acetic acid till the urine is a pure orange colour, then add 5 ccm. of this acetic acid, heat it over a gas flame, and triturate the baryta solution (11·22 g. acetate of baryta in a litre; 1 ccm. = 3 mg. SO_3) until the precipitate becomes distinctly red. Dark urine must be decolorised by acidulation with acetic acid, and heating with zinc powder, the zinc removed by alkalinising with soda solution, boiling and filtering; the filtrate being washed with a little hot water.

Untersuchungen über die quantitative Bestimmung der Phenolkörper des menschlichen Harns—By Rumpf (*Zeitschr. f. physiol. Chemie.*, xvi., p. 220).—Experiments with quite pure phenol shew that the estimation by weight as tribrom-phenol gives very uncertain results, for the most too high, from admixture with tribrom-phenolbrom. If the bromine is not added in excess as usually, but only in definite amount, the results are too low, because tribrom-phenol is not entirely insoluble. On the other hand, tritration after Koppe-Schaar and Beckurt's method gave very accurate results. The conversion of parakresol into tribrom-phenol after Baumann and Brieger did not succeed, so that a quantitative analysis of parakresol seems impracticable. As urine when distilled with acids gives not phenol but kresol, a quantitative analysis of phenol bodies in the urine seems at present impossible.

The precipitate with bromine from the urinary distillate appears to be in great part insoluble in solution of sodium carbonate, a small part being soluble. The insoluble portion agrees in its properties (relation of melting point, affinity for bromine, formation of silvery crystals, etc.,) so closely with dibrom-parakresol, that its identity can hardly be doubted. The soluble portion is not tribom-phenol, but probably a mixture of lower bromised kresols mixed with phenol. In addition, the precipitate contained a pigment which was red in alkaline, and yellow in acid solutions.

Oxydation des Urobilins zu Urorosein.—J. Zawadzki (*Arch. f. exp Path.*, Bd. 28, p. 450).—Nesecki and Sieber have given the name uroroseïn to a urinary pigment which is extracted from acidulated urine by shaking with amyl-alcohol, and which is characterised by its rose colour and absorption bands lying between D and E, nearer to D. Zawadzki has observed that by adding mercuric chloride solution to an alkaline solution of urobilin, the clear yellow liquid becomes rose red. When the liquid is acidulated with hydrochloric acid and shaken with amyl-alcohol, the red colouring matter is separated and gives the above-mentioned absorption bands.

Zwei Falle mit aufreten eigenartiger Farbstoffe im Harn.—By A. Baginsky (*Arch. f. Kinderheilkunde*, Bd. 13, p. 312).—In the first case, a child of eighteen months, suffering from double pneumonia passed urine which stained its linen a dirty red, and which was neither blood colouring matter, nor indican.

In the second case, a child of eight, in the desquamating stage of scarlatina, was greatly cyanosed without obvious cause. The urine was free from albumen, and yellow, but on the addition of nitric or hydrochloric acid it became intensely purple-coloured. On alkalinisation it resumed its original colour. On examination, it proved to contain two pigments, one closely related to indigo-red, depositing it after addition of hydrochloric acid, and a second, which appeared to be identical with the uro-rosein of Nesecki and Sieber.

Hæmoglobinurie als Complication von Erysipel bei einem 7 Wochen alten Knaben.—Joseph Langer (*Prager med. Woch*, 1891, No. 34).—A child, aged 7 months, was attacked by erysipelas, and shortly before death his skin became jaundiced and his urine loaded with oxy-hæmoglobin. *Post mortem* he was found to have infarctions of the kidney and miliary abscesses. The liver shewed no change. The mother had suffered from syphilis; but the author believes that the hæmoglobinuria and icterus were due to hæmolysis caused by the virus of the erysipelas.

Green and blue urine.—Under this title Dr. Fr. Chlapowski (*Nowiny Lekarskie*, January, 1892) describes the greenish and bluish urine which he observed in a patient (and also in himself) after having taken internally a weak solution of methylene blue. The author proposes the use of this remedy (in pills) for the purposes of examining the absorptive power of the stomach instead of potassium iodide, which has been employed formerly for that purpose.

Untersuchungen ueber den Kohlehydratgehalt des faulenden Menschenharns.—By G. Treupel (*Zeitschr, f. physiolog. Chemie*, xvi., No. 47).—In order to decide the question of the presence and amount of carbohydrates in putrefying urine, Treupel made use of Molisch's test with α-naphthol and sulphuric acid; the quantitative estimation is based on the dilution of the urine until the reaction no longer appears; this takes place according to Udransky and Luther at 0·02 per cent., but the author working with a solution of grape sugar made it 0·01 per cent.

He studied the changes of the carbohydrates in four urines, of which two were exposed to the air and two covered up. The contents in carbohydrate shewed :—

Urine	I.	originally	0·1	per cent.,	after	44	days	0·01—0·02
,,	II.	,,	0·1	,,	,,	47	,,	0·05
,,	III.	,,	0·1	,,	,,	31	,,	0·04
,,	IV.	,,	0·6	,,	,,	30	,,	0·02

If the urine was shaken the α-naphthol reaction became stronger; this he attributes to bacteria, which had sunk to the bottom with the earthy phosphates. In one urine which was fermented at 35° the carbohydrates diminished more rapidly than at the ordinary temperature. These results agree generally with those of Salkowski.

Des ptomäines urinaires dans le goitre exophtalmique.—E. Boinet and Silbert (*Revue de Méd.*, 1892, p. 33).—The authors succeeded in extracting from the urine of a patient suffering from exophthalmic goitre, with motor and cardiac complications, three ptomaines producing in animals symptoms analogous to those shewn in this woman. These ptomaines acted (1) on the heart, (2) on motion and sensation, (3) on the temperature. The crude active principle which existed in the products of evaporation of the urine possessed convulsive properties; small doses injected into the veins of the ear of a rabbit caused almost instant death. In the frog subcutaneous injection of the same substance caused slowing and weakening of the heart-beat, dilatation of the ventricle, and arrest of the heart in diastole. This also produced convulsions Each of the ptomaines of the series *alpha* possessed special physiological actions. The *amylic* ptomaine caused slowing of the heart, weakening of the systole, arhythmia, prolongation of diastole, and stoppage of the heart during diastole. It produced convulsions. The *benzene* ptomaine caused at first diminution, then transitory increase of systolic energy; later, weakening of systole and prolongation of diastole. Fresh doses recalled the vigour of the systole and shortened the diastole. Its action on the heart was slight; its convulsive effect was more marked. The *ether* ptomaine produced at first weakening and slowing of the heart, then acceleration, and finally arrest in systole. It caused at first muscular hyper-excitability, and later convulsions.

The ptomaines of the *beta* series, obtained in acid media, had a slightly different action.

The amylic ptomaine caused a transitory augmentation of the heart's energy, then weakening and irregularity, followed by arrest in diastole.

The ether ptomaine increased decidedly the systolic curves.

Lowering of temperature, lasting an hour, followed the injection of the amylic ptomaine β into the peritoneal cavity of a guinea pig, and the same was observed after its intra-venous injection in a rabbit, but at the end of three hours, an increase of half a degree was observed, and the temperature did not become normal till after nine hours.

Ueber das Vorkommen von Diaminen bei Krankheiten.—By Ernest Roos (*Ztschr. f. physiol. Chemie*, xvi. 3, p. 192, 1892).—Baumann and Von Udransky have found pentamethyl-endiamin and tetramethyl-endiamin—identical with Brieger's cadaverin and putrescin—in the urine and fæces of a patient with cystinuria. Brieger and Stadthagen had found cadaverin in two cases of cystinuria. That there is a causative relation between the formation of cystin and ptomaines is scarcely thinkable. Roos has found cadaverin and putrescin each once, in the fæces of a case of malaria complicated with bowel trouble, and a case of cholerine respectively. These poisons could not have been the cause of the intestinal affections, as Baumann and Udransky mixed them in food in large quantities without producing any such effect.

REPORTS OF SOCIETIES.

BRITISH MEDICAL ASSOCIATION,

ANNUAL MEETING AT NOTTINGHAM.

DISCUSSION ON THE SURGERY OF THE LIVER AND GALL-BLADDER.

In the Surgical Section on Thursday, July 28th, a discussion on these subjects was introduced by Mr. Mayo Robson, of Leeds. He was followed by Mr. Lawson Tait and several other speakers. After the two speakers mentioned had dealt with the subject, however, there was but little left to be said by those who followed them. It was an unusual experience and at the same time a most satisfactory one, to find such unanimity on a subject which has so recently come to the fore as hepatic surgery. The ground covered by the title was so extensive, that some of the conditions requiring operative interference received but scant attention. This was notably the case with reference to injuries of the liver. This, however, was not the fault of the originator of the discussion, and we may take the opportunity of saying that the discussion was one that did credit to the section, and redounded to the honour of British surgery. Mr. Mayo Robson did full justice to the work of Mr. Lawson Tait as a pioneer in this branch of surgery, and to the advances made by other operators in the same field, whilst his record of work done shews that he has been brilliantly successful in his own extensive list of cases.

The opinion was expressed and was apparently accepted, that injuries of the liver by contusion, wound, or otherwise, are on the whole amenable to surgical interference, and this probably is so, but at present what is needed is a careful record of cases of this kind operated on, whatever the result may be, so that we may have trustworthy guides as to the indications for operating and as to the results obtained. Formerly an impression was widely held that bile was to the peritoneal cavity an intense irritant, but in this as in so many other details, modern experience has been found to be at variance with what tradition has handed down. In many operations it is practically impossible to prevent considerable fouling of the peritoneum with bile, as for instance in the case of a contracted gall-bladder which has to be drained, and which it is impossible to bring up to the margin of the abdominal wound. In such cases experience has shewn that if a tube be introduced so that the escape of the bile and mucus outside the abdomen is free, no harm as a rule results. Further security may sometimes be provided by stripping off parietal peritoneum and using it, or the edges of the omentum, to shut off the general peritoneal cavity, so that the bile cannot escape into it. Cases that we have seen in the *post mortem* room go to confirm the statement that bile is but a moderate irritant to the peritoneum.

Leakage from a distended gall-bladder may go on for days before it causes the death of the patient, giving ample time for successful interference, and after an injury which tore across the left hepatic duct we have seen the lesser cavity of the peritoneum distend with about thirty ounces of bile, with scarcely any evidence pointing to its presence during the patient's life, and with hardly any peritonitis to be found after death, which was mainly from other causes.

In the discussion, there was a general agreement that in ordinary uncomplicated cases of cholecystotomy the mortality should be extremely small, and that in gall-bladder calculus this should be the routine operation, removal of the gall-bladder being only rarely called for, and Mr. Tait went so far as to say that in his extensive experience the operation had never been called for, though he did not condemn it as never to be done. Mr. Robson stated that instead of making as he formerly did a rather formal operation of excision of the gall-bladder, he now considered it sufficient, as a rule, to put a ligature round the reservoir close to its junction with its duct, and snip it off.

On cholelithotrity, there was little that was new brought forward, but in difficult cases where the stones cannot be dislodged, it is advised to stitch the gall-bladder in the wound, and to try the effects of simple injection of warm water, or perhaps some mild stimulant into the duct, from the wound, with the hope which is likely to be realised, that the stones will eventually be liberated. The absence of jaundice in most cases of distended and calculus-containing gall-bladder was emphasised by several speakers.

Persistent jaundice is regarded as of grave prognosis, indicating generally, indeed one speaker said practically always, cancer obstructing the ducts. In connection with persistent jaundice, Mr. Jordan Lloyd drew attention to the value of Osler's observations on certain cases of persistent jaundice with exacerbations following on attacks of colic, and associated with rigor and fever. Osler shewed that these symptoms are strongly suggestive of calculus impacted in the common bile duct, an observation confirmed by Mr. Robson in his book recently published, and by a case recently operated on by Mr. Lloyd.

In operations for hydatids, the general feeling appeared to be that it is neither necessary nor desirable to resect the cyst-wall, it being sufficient to drain the cyst, except in some rare cases of calcified cysts which might require completely separating out from the liver tissue for obvious reasons.

Resection of the cancerous gall-bladder is evidently an operation that can but seldom be called for, owing to the rarity of the disease limited to this part. Resection of the liver itself for malignant growth was distinctly condemned as being outside the realm of useful surgery.

Every one is familiar with the fact that patients suffering from jaundice are liable to hæmorrhage from various parts, and after operations on jaundiced patients uncontrollable bleeding from the wounded tissues has been the direct cause of death. Mr. Mayo Robson thinks that in chloride of calcium we may have a valuable remedy for this hæmorrhage. He appears only to have tried it in one case. The patient was suffering from severe bleeding from various sources, and before operating Mr. Robson administered chloride of calcium in 15-grain doses, every four hours. At the time of operation the bleeding was moderate, and there was none after, a result which he is inclined to attribute to the drug administered. He was induced to give it by the reports of its efficacy in promoting coagulation of the blood.

REVIEWS.

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EPIDEMICS, PLAGUES, AND FEVERS.*

We do not know what has led this noble author to trouble himself to write a very clear and excellent account of the etiology and prevention of the chief infectious diseases, but we have much pleasure in expressing our recognition of the accurate manner in which he has performed his task. We can recommend this work to the profession as containing a good account of modern views on the general pathology of infectious disease and of the special conditions under which the various forms originate. No doubt the work is one which is intended for the laity, and should be read by all who are concerned in the administration and execution of the laws relating to health. The author's recommendations and conclusions are marked throughout by good sense, and are strictly in accordance with the best medical and scientific teaching. We can only wish the book many readers among those for whom it was written—members of local sanitary committees, school managers, and employers of labour.

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* Epidemics, Plagues, and Fevers: their Causes and Prevention. By the Hon. Rollo Russell. London: Edward Stanford. 1892.

AN INTRODUCTION TO MODERN THERAPEUTICS.*

THESE lectures were delivered three years ago and appeared at the time in the weekly medical journals. They are now reprinted, the delay being accounted for by the journey to India undertaken by their author, in order to serve on the Hyderabad Chloroform Commission, and also by his desire, not yet fulfilled, to write an additional section on the action of drugs on the function of the kidneys and other organs. The scheme of the lectures is to set forth the modern standpoint of pathology and chemistry and to indicate how far chemical structure supports the therapeutic application of substances in the prevention, control, and cure of diseases looked at in the light of modern pathological research. The result is somewhat disheartening to those who believe in this method of getting at truth, as the teaching of experience by no means agrees with the theoretical conclusions Dr. Brunton believes that anæsthetics and antiseptics constitute the greatest advance in modern therapeutics and credits the latter with having rendered possible the great advance in abdominal surgery in spite of the well-known fact that their use has been long given up by nearly all operators in this department!

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* An Introduction to Modern Therapeutics ; being the Croonian Lectures on the relationship between chemical structure and physiological action in relation to the prevention, control, and cure of disease. Delivered before the Royal College of Physicians in London, June, 1889. By T. Lauder Brunton, M.D., etc. London : Macmillan & Co. 1892.

HOW TO FEEL THE PULSE, AND WHAT TO FEEL IN IT.*

The author believes that the pulse has been taken scanty notice of in modern medical literature, and he desires to direct attention to matters which are scarcely touched upon in most books on the pulse, but which are deemed of practical importance. The subject is dealt with in short paragraphs with a displayed headline, and the author's teaching is quite clear and definite. We regret to notice that he teaches that fifteen, or at most thirty seconds are sufficient for the duration of an observation of the pulse-rate. We believe that students should be taught always to count the pulse for a minute, and more if it is abnormal. Hints are given for finding the temporal, brachial and carotid pulses which a student will find useful, though we believe the brachial pulse can be best felt by grasping the upper arm so that the tips of the fingers come round from behind and compress the vessel directly against the bone, which is supported by the palm of the hand.

There is no description of the sphygmograph or any pulse tracings, which should find a place in any treatise on the pulse in order to illustrate the various kinds of waves. There is a great deal that is excellent in the book, and it would be quite worth while making it complete at some future time.

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* How to Feel the Pulse, and What to Feel in it. By William Ewart, M.D., F.R.C.P. London: Baillière, Tindall, and Cox. 1892.

ON COMMON NEUROSES, OR THE NEUROTIC ELEMENT IN DISEASE AND ITS RATIONAL TREATMENT.*

THESE lectures were delivered to the members of the Harveian Society of London, in November and December, 1891, and have appeared in the *Lancet*, where those who remember their easy style and sound clinical character will welcome their re-appearance in the form of the elegant little book before us. Perhaps the author speaks too confidently of the prognosis and cure of many of these cases which are exceedingly prone to relapse, but the methods employed are judicious and may be followed with the assurance that at least they will do no harm, and are much less hurtful than many of the means by which such people treat themselves, or are treated by others. Probably nothing is more injudicious than the routine use of bromide of potassium, and no drug is more abused.

THE EXTRA PHARMACOPŒIA.†

WE cordially welcome the seventh edition of this indispensable little book, which is superior to all its predecessors from the careful manner in which a new edition is brought out about every eighteen months. It is a *résumé* of useful information, and most useful not only to the man who wants to be quite up to date in his prescriptions, but in order to make him at least acquainted with the names and reasons for the use of the numerous new drugs which he must hear of in practice even if he does not use them. A few days ago we saw a case of epileptic vertigo, and on explaining the nature of the case, we were told that a friend of the patient was taking "elepizone" for epilepsy. We had never heard of the remedy, but fortunately the seventh edition of the Extra Pharmacopœia was at our elbow, and in that we read as follows:—"Elepizone.—A nostrum sold under this name contains approximately bromide of sodium 30 grains, bromide of ammonium 30 grains, bromide of potassium 20 grains, tincture of nux vomica 15 minims, with caramel q.s. to 1 ounce of winter green water. Dose 1 drachm four times a day." We know of no other book in which we could have obtained this information, and as it is possibly unknown to our readers, we have printed the extract in full. Every practitioner should look upon the Extra Pharmacopœia as an absolute necessity in practice.

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* On common Neuroses, or the Neurotic Element in Disease and its Rational Treatment. By James Frederic Goodhart, M.D., F.R.C.P. London: H. K. Lewis. 1892

† The Extra Pharmacopœia. By William Martindale, F.C.S Medical References by W. Wynn Westcott, M.B. Lond. Seventh edition. London: H. K. Lewis. 1892.

A POCKET CASE BOOK FOR PRACTITIONERS AND STUDENTS.*

This little book is intended for case taking, and will be found very useful to students who wish to possess brief records of cases which interest them in the wards. Each case has two pages of printed headings for notes, two half pages for further notes, a temperature chart and an outline diagram of the trunk. Each book will hold thirty cases, and its size and shape make it easy to be carried in the pocket. We strongly recommend it to earnest clinical students.

HEALTH: THE VOYAGE TO SOUTH AFRICA AND SOJOURN THERE.†

This book is published by the owners of the well-known line of steamers running to the Cape, and contains much information which will prove useful to anyone going to this colony in the search of health. It is a compilation, but it is all the better for that, as the sources of information are mainly official and always well chosen. Copies can be had *gratis* on application to the publishers.

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[*] A Pocket Case Book for Practitioners and Students. By Alex. Theodore Brand, M.D., C.M. London: Baillière, Tindall, and Cox. 1892.

[†] Health: The Voyage to South Africa and Sojourn there. Donald Currie and Co. 1891.

THE QUEEN'S FACULTY OF MEDICINE
IN
MASON COLLEGE, BIRMINGHAM.

BY BERTRAM C. A. WINDLE, M.A., M.D., D.SC.,
DEAN AND PROFESSOR OF ANATOMY IN MASON COLLEGE.

At the present epoch in the history of the Birmingham Medical School, it may be of interest to the readers of this Review to have briefly laid before them the reasons which have prompted the change which has now taken place, the alterations which it will entail, and the benefits which it is hoped and expected will follow from it.

For some years past the increase in the number of students in the School had been very considerable, so considerable, indeed, that the Council of the Queen's College found their resources taxed to the uttermost to provide the necessary accommodation for them. In spite of much consideration, and of the expenditure of what were, relatively to the funds of the College, large sums of money on alterations in its structure, the Council found themselves two years ago still face to face with the same problem. Indeed, it was at that date quite evident to all capable of taking a large view of the question, that one of two courses must be followed if the success of the school was to be looked for and its reputation maintained. Either the chief part of the existing structure must be pulled down and rebuilt from the foundations, or the Faculty must be transferred to new and larger buildings elsewhere. To accomplish either of these objects unaided was an impossibility; to attempt them would have been only to plunge the College once more into the sea of financial difficulties from which it had been with so much difficulty and at so great cost, extricated in 1867.

But the Council learnt that the authorities of the neighbouring Science College were willing to entertain proposals for an amalgamation of the Medical Faculty with their existing Departments. Such a scheme had many advantages to recommend it. In the first place, it was in accordance with the policy which had proved so successful in the case of other large cities, notably in that of Manchester. In the second place, Mason College was ready and willing to provide the necessary buildings and equipment without making any call upon the funds of the Faculty. Again, the Faculty would under such an arrangement be divorced from its connection with a theological school, a connection which it is not too much to say had never been to its advantage, and placed in the more natural position of sisterhood to the faculties of arts and science in existence in Mason College. Finally, there was another reason which had great weight with many of those concerned in the negotiations. It has long been the hope of some of those connected with higher education—and the number sharing it has largely increased and is daily increasing — that Birmingham should become the centre of a Midland University, and that Birmingham students—second to those of no other city in abilities and industry, and provided with almost unrivalled opportunities for study—should be placed in a position of equality in the matter of obtaining degrees with those of other cities. There were serious difficulties in the way of the accomplishment of such a hope in the position of affairs which existed at the date when negotiations were commenced. The absence of any common governing body for the institutions which would be concerned in such a movement was one, and the existence of a Theological Faculty connected with a particular denomination in one of the colleges was recognised as being no less a stumbling-block.

Influenced by these considerations, the councils of the two colleges, having agreed upon the principle of the transference of the Medical Faculty to Mason College, appointed a joint committee to consider its details. Of this committee Mr. Lawson Tait—who had from their commencement taken a leading part in the negotiations, and who throughout their continuance worked most generously and ably to bring them to a successful termination—was appointed chairman. On the 19th of March, 1891, being somewhat less than five months from the initiation of the project, the final local steps were taken, and the scheme received almost unanimously the approval of one of the largest meetings of the governors of the Queen's College ever held. It was received with complete satisfaction by the press, both local and medical, and the few notes of disapproval which were heard, only served to emphasise the general sense that a wise and prudent step had been taken.

It was necessary, however, to obtain legal sanction for the scheme, and to do so has taken fifteen months, the engine of the law in this case almost eclipsing itself in the slowness of its movements. All difficulties have however now been removed, and on the 1st of September the Medical Faculty of the Queen's College became the Queen's Faculty of Medicine in Mason College, and its professors Queen's Professors in the last-named institution.

As regards the name of the College, a short note of explanation may be useful. It is intended that eventually the name of the institution shall be "The Queen's and Mason College, Birmingham," but it is impossible under Sir Josiah Mason's deed of gift for such a title to be assumed without the obtaining of an Act of Parliament or a Royal Charter. The Council of Mason College have however pledged themselves to use their best endeavours to obtain such an Act or Charter at the first practicable moment.

As regards the arrangements under which the Faculty will work it is not necessary to speak at length, but this at least may be said, that the teachers therein will, through their Board of Studies, have a much larger voice in the management of the school and in the selection of their colleagues than was the case in Queen's College.

The new buildings, somewhat delayed by the unfortunate and prolonged strike in the building trade, will be extensive and carefully planned. The Anatomical Department will consist of a Dissecting Room 91 feet long by 27 feet wide, which will be lined throughout with white glazed tiles and lit by a ridge and furrow roof as well as by side windows, and carefully ventilated;

a Theatre capable of seating 223 students, a Lavatory and Cloak Room, a Museum, a Class Room, with rooms for the Professor, Chief Demonstrator, Demonstrators, Proctors, for the preparation of subjects and specimens, and for storage. There will also be Museums of Pathology (46 feet by 45 feet), Materia Medica, Public Health, and Dentistry, the latter in combination with a Dental Laboratory. There will be a General Theatre capable of seating 326 students, a Bacteriological Laboratory, General Cloak Room and Lavatory, a Dean's Room, Waiting Room, and apartments for the janitor. A special retiring room is provided for the Medical Professors, and the sanitary arrangements have received careful attention.

The College, it is perhaps scarcely necessary to say, already includes complete Departments for the study of Chemistry, Physics, Comparative Anatomy, Botany and Physiology, the latter having been recently considerably extended, and notably by the formation of a Laboratory for Physiological Chemistry. The Class of Pathological Histology will be conducted in the Physiological Laboratory during the time when that is otherwise unoccupied. Thus the Birmingham Medical School will be fitly housed and provided with means of teaching such as it has never hitherto possessed.

It cannot be too strongly stated that the change which takes place is not the constitution of a new School, but the transference of the old School to new quarters, quarters in which past students will receive a hearty welcome whenever they desire to pay them a visit or to avail themselves of their resources. The change which has taken place, and above all the manner in which it has been accomplished, is the best omen that the prosperity of the School will be maintained and increased so that its well-wishers may look forward with confidence to the day when their hopes will be fully realised, and the Birmingham Medical School will form the Medical Faculty of a Midland University.

Miscellany.

AZTEC MEDICINE.

Dr. David Cerna contributes to the University Medical Magazine some correspondence on the very interesting subject of the state of the science and art of Medicine in Mexico at the time of the Spanish Invasion. He has derived his information chiefly from a work entitled, "La Historia de la Medicina en Mexico desde la Epoca de los Indios hasta la Presente," by Francisco A, Flores a medical student, who has had access to such stores of historical knowledge as are to be found in Spanish writings and Aztec hieroglyphics.

The primitive medical superstitions of the ancient Mexicans resembled closely those entertained by the Egyptians, Greeks, and Romans. The Mayas regarded Citboluntun and Ixchel as the god and goddess of medicine, while the Aztecs proper considered Tzapotlatetan as the goddess of the healing art in general, and the discoverer of many medicinal drugs. Xipe or Xipelotec was the god of skin diseases. and after smallpox was introduced by the Spaniards, was looked upon as presiding over the production of that dreadful disease. The dirty Nanahuatl was the god of leprosy and elephantiasis. and Amimitl presided over certain diseases of the stomach. The great Quetzalcoatl, the god of the air, was looked to as the cause of coryza and rheumatism Cihuacoatl or Quilaztli was held by the Mexicans to have been the first woman who bore children, and hence she became the goddess of natural labour. Tzinteutl or Xochiquetzal was the goddess of pregnant women; Xolotl the divinity of twins and monstrosities; Ixtlilton or Tlaltecuin, a black deity, presided over the diseases of children; lastly, there was Centeotl, the goddess of the earth, who presided especially over therapeutics and also over the medical profession at large. In accordance with these superstitions, these primitive people were accustomed to resort to the gods for the relief of their ills, and the general practice of private and public supplications, offerings. and even human sacrifices, was carried out in accordance with these beliefs.

But in addition to this theosophical system there were physicians, surgeons, obstetricians, and pharmacists, who had to go through a course of instruction and become licensed to practise, while quackery and witchcraft were severely punished by a special court or tribunal. The regular practitioners seem to have applied themselves with diligence to the study of their profession, and to have had medical societies which provoked reunions, especially at the capital of the empire, and in them the most interesting medical topics were brought forward and discussed. There were civil and military hospitals for the reception of the sick among the poor and destitute and of those who had been injured in the service of the country. Montezuma II. established a home for incurables near his imperial palace. and a leper hospital dedicated to Nanahuatl existed near the great temple. Dr. Cerna is of opinion that the Aztecs knew much more than they were willing to reveal to their conquerors. "Humiliated, persecuted, and threatened constantly by a conquering people, under whose absolute control fate had placed them. the Mexicans abstained from communicating and propagating their knowledge, and thus much of the real progress they had undoubtedly attained in the arts, in mechanics, in astronomy, and in medicine particularly has been irretrievably lost We cannot, we should not judge of ancient Mexican civilisation by the degraded remnants left to-day—the sad spoils of an unjust conquest. The Mexican Indians of to-day know nothing of the arts, the sciences, the hieroglyphics, the monuments, and other proofs of the high civilisation of their progenitors. The ancient civilisation that was buried under the great Tenoxtitlan can hardly be rebuilt. Some of its ashes can be removed, perhaps, by a prolonged study. but what has been lost or totally destroyed through the deleterious influence of a cruel conquest can never be replaced. The Spanish conquest brought to Mexico, it is true, European civilisation ; but it was a civilisation associated with feudal practices, tinged with fanatic ferocity, and with a tendency to destroy everything in its path—that is, everything that was not in accord with its pretences. In Anahuac, with the exception of what was saved through the heroic efforts of some wise ministers of the church. everything was demolished, from the humble hut to the majestic 'teocalli ;' from the comparatively insignificant effigy to the colossal and imposing Huizilipochtli; from the terrible stone of sacrifice to the great and unrivalled calendar; from the simple hieroglyphic to the magnificent painting ; and thus the most brilliant pages of Mexican history were hopelessly and criminally blurred. The same thing applies to the science of medicine ; and yet the few facts we possess, and many other points concerning it not yet fully studied. reveal to us the importance of a serious study of the history of the healing art, proper, of the American continent, the beginning of which. no doubt, took root under the direct watching of the majestic and eternally snow-crowned Popocatepetl and Ixtlalcihuatl."

New Books, etc., Received.

Anæsthetics, their Uses and Administration. By DUDLEY W. BUXTON, M. D., B.S. Second Edition, 1892. London : H. K. Lewis.

Cure radicale des Hernies, avec une étude statistique de deux cent soixante-quinze opérations Par le Dr. JUST LUCAS-CHAMPIONNIERE. Paris : Rueff et Cie.

Health : The Voyage to South Africa and sojourn there. Donald Currie and Co.

Annual of the Universal Medical Sciences, 1892, in five Vols. Edited by CHARLES E. SAJOUS, M.D. Philadelphia, New York, Chicago, and London : The F. A. Davis Company.

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THE
BIRMINGHAM MEDICAL REVIEW.
OCTOBER, 1892.

ORIGINAL COMMUNICATIONS.

INAUGURAL ADDRESS

DELIVERED ON THE OCCASION OF THE OPENING OF
THE QUEEN'S FACULTY OF MEDICINE IN CONNECTION WITH
MASON COLLEGE, BIRMINGHAM,
AND OF THE DISTRIBUTION OF PRIZES,
On September 30th.

BY SIR GEORGE MURRAY HUMPHRY, M.D., F.R.S.,
PROFESSOR OF SURGERY IN THE UNIVERSITY OF CAMBRIDGE.

THE UNION OF THE COLLEGES, TYPIFYING THE RELATION BETWEEN MEDICINE AND SCIENCE.

WE are met to-day for two chief purposes. *First*, to celebrate the Union—the nuptials, we might say—of two great Institutions. The older of these was commenced in 1825 with a course of lectures by Sands Cox, a well-known figure in surgery in my early time, who had the felicity, as it was also my privilege, to teach Human Anatomy in conjunction with Physiology and Surgery, and to impart to it the interest resulting from that union. It was chartered as "Queen's College" by her Majesty in 1845, and has grown into a well-equipped School of Medicine, which is now about to enter upon a fresh hopeful career, in new and extensive buildings, fitted up with due regard to the necessities of modern medical education, and supplemented by the clinical material which the hospitals of a great manufacturing centre afford. The other Institution has the peculiar interest of being the outcome of the intense appreciation of science by one who, from the most humble beginnings and the most humble education, had raised himself by practical genius and business quality to be one of the foremost and wealthiest men in this great and active town, and who rejoiced in the hope that he would hereby leave behind him "an intelligent, earnest, industrious, and truth-loving and truth-seeking progeny, for generations to come."

Could Sir Josiah Mason and Mr. Sands Cox be with us to-day how heartily would they shake hands in the participation of this ceremony, in the realisation of much that they longed for, and in the prospect of much more good results in time to come.

The union of Medicine and Science, which is thus typified, is one that is essential to the fulness of both and that has existed throughout their history. The only persons of scientific pretentions in the Homeric period appear to have been physicians. In the great school of Alexandria and in every subsequent great school of learning and science—in Italy, in France, in Germany, and Britain, wherein we still include Ireland, and long hope to do so—medicine has held a prominent place. The physicians, to wit, Linacre and Caius, were the most learned men of their time ; and though many still rank high in learning and science, the range of literature and the scope of knowledge is now so great, that no man can attain the same eminence in many subjects as was reached by those masters in bygone centuries It thrills me a little when I hear Medicine designated as an Art. True, it is an art, but it is a science also. It is a compound of both, for it is both science and the practical application of science; and the practical application of its science advances *pari passu* with the science itself. Its subject is the "Human Body," in which other sciences, physical, physiological, and psychological, culminate, and in the aberrations—the morbid phenomena—of which the most complex and difficult of all scientific problems are found. So difficult are they, that they often set scientific thought at defiance and cause charlatanry to step in and cut their Gordian knots. Hence charlatanry has ever been an attendant upon medicine, usurping the field most where science is weakest, and waiting for its expulsion in the time when the further developments of science shall have made deeper search into the mysteries of medicine. Where, it may well be asked, can Physics and Chemistry find higher and worthier scope than in the anatomical mechanism, and in the physiological and pathological processes of man? and how can medicine make much advance except by the aid of these, her true handmaids? Never did medicine turn to them with more earnestness and more longingly than at this time, when she is prying closely into the processes of life, and searching anxiously into those changes which constitute disease and into the recondite sources of them; when a new and fertile field of research has been opened up, and patient, careful investigation has given fresh hope of combating the maladies which devastate our people.

Sad would it be for both if medicine and science were ever separated, and great reason have we to hope that the aspirations of your founders will be realised by the mutually inspiring work of their institutions; and we may confidently look forward to ever increasingly beneficial results from the proceedings of this day.

It is interesting to note, in connexion with the events of the day, that Sir Thomas Gresham, the prince merchant and great financier of Elizabeth's time, who appreciated the value of education, having been placed by his father, who was also a great merchant and financier, at Caius College in Cambridge, and who, like your Josiah Mason, founded a College of Science which still exists in the City of London, left as an injunction, that "the lectures were to teach things interesting to city men, but they must go to the bottom of them." He thereby indicated his consciousness that interest and benefit lay not simply in the things themselves, but also, and still more, in the mental exercise involved in the search into their causes. Possibly he further indicated his consciousness, that that source of interest never could be exhausted, forasmuch as the bottom of things never could be reached; that, however deep in future ages the human search might go, a deeper still would remain to stimulate research, and to inspire interest.

"We speak the wisdom of God in a Mystery" are the words of one of the most eloquent, and earnest, as well as sincere of men. How true is the remark as applied to science, and indeed all knowledge—*σοφία ἐν μυστερίω*—true now as much as when he wrote. In spite of all the, to us, enormous advance which has taken place in the intervening eighteen centuries and a half, and in spite of our pride of this nineteenth century, the source of life and all force is still in what seems to be an eternal, an *Εις τα αιωνα,* mystery.

The great questions, "*whence* comest Thou, and *whither* goest Thou," are still unanswered, and unanswerable by human ken. They need evidently a higher than human ken to tell; and those who are most advanced in knowledge, and have the highest and clearest range of view, are most ready to admit this.

Our *Second* function on the present occasion is to give honour to whom honour is due, to recognise those who by good work have won their way to the front in student life, and to urge them to continuance in well-doing, and to wish them the future happiness which it will merit.

THE GREEK IDEAL OF EDUCATION APPLICABLE TO MEDICAL EDUCATION.

No nation, I suppose, gave greater heed to education than the Greeks of old, and none with greater success, as is proved by their unrivalled philosophical disputations, their unrivalled dramatic productions, their unrivalled works of art, and their unrivalled military prowess.

Their ideal was that a man should be a "speaker of words and a doer of deeds," which implies that he should be also a thinker of thoughts; for good thinking lies at the root of good speaking and good doing. Their aim in education was to make a man eloquent and persuasive in council, and brave and resolute on the field of battle, having a good soul and a strong body —as the Romans also expressed it, "*mens sana in corpore sano*" —all the powers developed in due proportion, by such mental and physical training as best leads to goodness of soul, and strength of body. The consummation of the ideal was that thought should be free, and action free by making both rational, and so attaining to the realization of the glorious sentiment "the Truth shall make you free;" and the prize aspired to was the crown of laurel, and the respect of their fellow citizens.

The ideal was a high one, as the ideal of life and duty should ever be. It is an ideal, well suited to the life of medicine, for to no man, in a greater degree than to the medical man, is the combination of goodness of soul and strength of body more requisite; and to no man is the crowning addition of goodness of heart more important. Upon him it devolves to bring hidden things to light, to step cautiously from the old upon new ways, to weigh probabilities—wherein I suppose, consists what we call "common sense"—and with severe bodily strain, by night and by day, promptly and energetically, yet with gentleness and kindness, to carry out the practical application of his knowledge to the relief of his fellow men. Upon no man, in short, is there greater demand for varied qualities of mind and body. To attain them all in any high degree is impossible, but you must not be thereby dispirited, for happily there is no line of life in which good quality of some kind is more appreciated, and more telling. Energy and boldness, quietude and modesty, keenness and inventiveness, patience and perseverance, each and all have influence in the work of acquiring professional knowledge and in gauging and influencing the bodily and mental constitution of the sick.

THE WORKING LIFE A HAPPY LIFE.

Man, it has been said "is born to trouble as the sparks fly upward." Happily, there is a hereditary antidote to this inheritance, for it may be as truly said, that man is born to work, and, work is one of the great sources of his happiness. The work-a-day life is the happy life. Many of you have already experienced this, and all of you may be congratulated on the prospect of more fully realising it in the working life that is before you. Many of you, I say, have already experienced this, for those of you, at any rate, who have won the laurels know the pleasure of work. Everyone has pleasure in work when he takes to it with earnestness. Pleasure in work, is therefore a measure of earnestness in it, and the better the work the greater the pleasure. You, gentlemen, who have thus far succeeded, therefore had pleasure, proportionate to your earnestness, in the good work you have had to do.

All power brings with it its measure of enjoyment, and to man is given, in addition to the animal power and the enjoyment of the body, the higher and greater power and enjoyment of mind and thought. The former naturally preponderates in early life, the latter at a later period; but both, as the Greeks felt, are necessary to make up the complement of the perfect man. The young man should rejoice, not only in the growing strength and activity of his body, but also in the increasing vigour and power of his mental faculties, and in the means by which both are promoted. Pleasure therefore, in the time of student life—bodily and mental pleasure—is by all means to be compassed, and I take it for granted that you have experienced and do experience it; and the measure of it enjoyed now is the best guarantee for it in time to come.

EXAMINATIONS, AND THEIR RELATION TO TEACHINGS. THEIR DEFECTS.

The examination prospect, I grant, is not always a pleasant one, and the less you look at it the better. The tendency of examinations to cast a gloom over, and to detract from, enjoyment in work, is their greatest evil—an evil which much increases with the increased multiplicity of them. It was at its minimum in my day when a single hour of oral searching was the only trial to which we were subjected at the great portal, in Lincoln's-Inn-Fields, and as the result of it we were sent forth armed, as it was judged, *cap-à-pied*, to combat the maladies which attack the human frame, and to wield the scalpel, that weapon more formidable than the sword, upon those who entrusted themselves to us. The threatening cloud, therefore, no larger than a man's hand, cast little shadow upon us It has now spread over the horizon and almost threatens to deluge the scene and drown the joyousness of study. Well, gentlemen, the only resource is to gird up your loins and run, like the prophet, boldly before it. Examinations are a terror to idle men and should be that only. Keep steadily to your work; and the less you think about examinations the better will you pass them. They should be merely a stimulus and a guide to the diligent, the direction posts along the way telling him what paths he had better take as the best and surest road to the acquisition of that knowledge which will most fit him for the duties he has to perform. It is this feeling which should influence both the examiner and the examinee, both the teacher and the tester of that which is taught. There should be no conflict between examination and teaching. They should co-operate harmoniously in promoting the improvement of mental training and the acquisition of sound knowledge. I do not think this is sufficiently appreciated by teachers, examiners, and students at the present time; and I am often surprised to hear the sentiment expressed in an aphorismal and somewhat sententious manner that "teaching should guide examination and not examination guide teaching." It is becoming rather a cant phrase; and I often wonder whether those who utter it have really thought out the purport of what they say. The real fact is that examining and teaching are, and must be, supplementary to one another. The examiners and the teachers are, or should be, guides and checks and adjuncts to one another. They should combine to indicate the best subjects and the best methods. Every teacher is improved as a teacher by examining students other than those he has taught, as well as by examining his own students, and every examiner is improved as an examiner by regarding the students from the point of view of a teacher. I have for many years been an examiner as well as a teacher, and I do not think I ever learnt more as a teacher than by examining, during a period of ten years at the College of Surgeons, where I became intimately familiar with the thoughts and methods of other teachers, realised my own failings and theirs, and appreciated more fully the qualities and the needs of the various classes of students. I would say that for the completion of the mental equipment of a teacher it is desirable that he should have the experience derived from being an examiner of students who have been taught by others. I highly estimate the value, both to the student and to the teacher, of class examinations, which I have been in the habit of conducting almost daily for nearly fifty years; and I also highly estimate the value, both to the student and to the teacher, of that wider area of examination in which teachers are confronted with those who are not their pupils, whereby the range of view and thought of both teacher and pupil are widened and over-assurance in individual method and idea is checked. Each question which an examiner puts has, indeed must have, an educational bearing and should be looked upon in that light by him who sets it; and the right-minded student will not regard his examiner, from a hostile point, as one who is actuated by the exclusive desire to probe the depths of his ignorance. Be it remembered that it is the part of the examiner to ascertain ignorance as well as knowledge, that it is hard to do one without the other, that if the student does not know the position of the femoral artery, or the symptoms of pneumonia, or the treatment of iritis, it is the duty of the examiner to find out such voids and others of more or less serious import.

TOO MANY SUBJECTS AND TOO MUCH DETAIL.

The great defect in examinations consists, I think, in the difficulty of estimating power in the application of knowledge. It is comparatively easy to ascertain whether there is or is not the knowledge of a fact, but it is by no means equally easy to ascertain whether or not there is the knowledge of the bearings of the fact, that is its relation to other facts, whether in short there is the power of thinking about the facts known, and the power, consequently, of rendering the knowledge available. This difficulty of holding the balance between knowledge and thought is, and I fear must be, one of the chief defects in examinations, however conducted, and is the cause of some of the dissatisfaction which we hear now and then expressed with regard to the results in particular instances. One can quickly and easily ascertain whether a candidate knows the symptoms of a dislocation of the hip, and the method to be employed for its reduction, but it is a longer and less easy process to ascertain whether he understands the rationale of the symptoms and of the treatment required.

FACTS AND THOUGHTS.

Herein lies the difference between what is called "cram" and intelligent knowledge. The one is just an acquaintance with facts, the other implies an enquiry into and acquaintance with their causes, their beings, use, and ends—an acquaintance, that is, with principles. The two should go together. In this matter-of-fact age, when practical knowledge is so much in demand, the one commonly dominates over the other; and the tendency in teachers is to crowd the student's mind with copious, too often ill digested, facts, and in examiners to estimate the amount held and produceable at a given time, rather than the ability to use it. This is attributable in no small degree to the number of subjects required, and still more to the increasing details in each; and it is to be corrected only by paying more attention to principles and less to details. In the subjects accessory to medicine—especially biology, physics, chemistry—to give and require a good grounding in principles, with so much detail only as serves to illustrate the principles. The same remark applies, to some extent, to physiology and materia medica. The need of this limitation of detail grows as the several subjects grow, and as the teaching and examining in them fall more into the hands of those who are specially instructed in them and highly estimate them; and whenever I read over syllabuses of study and examination papers, I am impressed with the importance of narrowing the range of detail required. This feeling grows with me more and more; and I feel with regard to certain subjects that they had better be left out of the programme altogether, than that the student should be overladen and wearied, and his spirit broken by the multitude of facts and details that are required to be got up. The work of professional study above all should be happy work, and the period spent in it should especially be a cheerful happy period. The work is then most likely to be well done without damage to body or mind, and the results well remembered; and there can scarcely be a greater bar to educational progress than that which causes a distaste for study, and which, by overloading, makes work burdensome and painful to bear, and turns into dislike that love of knowledge which is a natural feature, an inborn and most blessed quality, of the human mind, that indeed to which all progress is mainly due.

All facts have a halo of interest about them which gives them their attractive glow, without which they are scarcely worthy of a place in the human thought. Facts may be regarded as pegs whereon thoughts may be hung, and thoughts are the rivets whereby the pegs are fastened. I do not wish you to despise facts. Without them there can be no thoughts; and those who have the clearest knowledge of facts are usually the persons who have the greatest power of thinking and reasoning upon them. This must not be forgotten, for facts constitute the great stronghold of medicine, the marking of them is the basis of experience; and the best and keenest observer of facts, who is usually also the best holder and combiner of them, is the best practitioner of medicine. Hence the cultivation of the good and acute observation of facts is, or should be, one of the great aims in medical education. It is indeed to the combination of the two great qualities—observation and reflection—that man owes his pre-eminence in creation; it is to the amount of good balance of these two that one man owes his superiority over others. By this, the great masters in our profession, all along the line of its history from Hippocrates to those who now hold sway, acquired and hold their places. By this, you must hope to win, and remember it is much under your own control.

THE IMPORTANCE OF ATTENTION.

Both observation and reflection imply, and are much dependent upon attention. It may be called the cardinal talent without which little can be done, whatever other qualities may be present. The attentive or intent worker is the good worker, whether in a manual or a mental sphere. Slovenliness in either results from want of attention. The attentive man is talented, and the talented man is attentive. The cultivation and promotion of this faculty should be one of the great efforts of education. This indeed is the necessary effect of good education, for no good learning can be done without it. It is the soul of accuracy; it is the soul of memory. If a man cannot remember you may be certain that he cannot attend. It is the soul of good thought and ripe judgment. Cast your eye round the dissecting room, you soon perceive who are the real learners of anatomy. You judge by their intentness uninfluenced by slight surrounding abstractions. A glance at the dissections enables you to judge by the neatness or slovenliness, *i. e.*, of the greater or less attention that has been given to the manipulatory process. A few questions tell you whether there is real attention and thought upon the work which is being done, whether the student is a mere manipulator or whether he knows what he is about. A few questions upon the part dissected three or four days ago gives still more valuable information, forasmuch as you then elicit information as to the enduring value of the attention, that is, of the impress which attention has made. A student reads in the ward a case which he has just taken. You judge of his attention to the case by the account he gives of the patient's appearance, tongue, pulse, etc., and by his description of the malady, and you form an estimate of his thoughtful attention from the manner in which he infers the nature of the case by the collection of the symptoms. Question him upon the case a few days afterwards without his notebook; and you ascertain to what extent his memory was impressed, and you judge that the recollection of the case is proportionate to the attention bestowed in taking and thinking upon it. You learn in short what real good the case-taking did him. How far better, as a process of mental training in observation and thought, is one case well, *i.e.*, carefully, seen and taken as compared with many cases carelessly observed. The results in knowledge being proportionate, not so much to the opportunities of seeing many cases as to the attention bestowed upon a few. It is not the walking round a hospital that gives large, rather I should say deep, knowledge. The test of this will be afforded by a few questions at the conclusion of the visits, such questioning being, I apprehend, the very best kind of clinical lecture that can be given. Unfortunately, it will be found that the knowledge acquired is often in an inverse ratio to the number of cases which have been seen. Let a man observe carefully the cases in the Birmingham hospitals, let him note well the questions and remarks of the able and experienced medical officers in examining the patients, for each question has its import, and he will have ample field for the acquisition of medical knowledge. Let the student digest the food thus supplied him, and he need have no sighing for pastures new.

SELF EXAMINATION AND INDEPENDENT THOUGHT.

Finally, gentlemen, let me exhort you to cultivate the habit of examining yourselves. At the conclusion of each hospital visit, consider what you have seen and learnt, and thus impress the lessons on your memory. Hurry not from one thing to another. In this as in so many things, the more haste the less speed. At the same time do not dawdle. Be intent, but be deliberate. By questioning yourselves you will be your own best teachers. Rely not so much on others as on yourselves. By cultivating self-reliance in study you will best promote self reliance in your future vocation. We hear much at the present time of German Universities, of German teachers, and German students. We acknowledge their superiority in some respects, more especially in the opportunities for, and the devotion to, research, and we would, if our restrictive laws did not hinder, imitate them in this; but we wish you to hold by the freedom and independence of thought and the energy and activity of body of Englishmen. We would not that you should be dragged at the chariot-wheels of any heroes, for that implies deadness or weakness, but rather that you should stand erect and march on by your own force with the firm, straight, dignified step that indicates strength of mind, determination of purpose, and unselfish nobility of character.

TUMOURS OF THE BLADDER.

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(Continued from page 156)

SYMPTOMS, PHYSICAL SIGNS, AND DIAGNOSIS.

Hæmaturia.—This is of all symptoms the most important, in fact the others are dwarfed by it almost into insignificance. It is not however the mere existence of hæmaturia in vesical growths which is of such great diagnostic value as the manner in which it occurs, its amount and frequency. How constantly this symptom is present may be gathered from the following table.

Kind of Tumour.	*No. of Cases.*	*No. suffering Hæmaturia.*	*No. in which Hæmaturia was the first symptom.*
Papilloma . . .	76	73	62
Other Innocent Tumours	39	21	9
Sarcoma . . .	22	13	11
Carcinoma . . .	64	55	47
	201	162	129

The Papillomas are almost invariably accompanied by hæmorrhage, and usually this is the first and sometimes the only evidence of their presence. The exposure of the delicate papillæ to laceration by contraction of the bladder walls, or the engorgement and rupture of the vessels by some accidental interference with the return of the venous blood, is a very patent cause of this constant symptom. The remaining innocent tumours do not so frequently give rise to bleeding, owing to the absence in most of fine papillary processes on the surface, but the thin-walled vessels in the superficial layers are easily burst by some slight engorgement of the tumour, and in others, as in Volkmann's myoma, the blood vessels are opened by ulceration, a condition which here, as in uterine myoma, may give rise to the most severe hæmorrhage.

With regard to the malignant tumours, some doubt appears to have existed as to the common occurrence of hæmorrhage in these at an early period of their existence and before other symptoms have declared themselves.

Sir H. Thompson says, "Carcinoma and Sarcoma do not usually produce considerable hæmorrhage until the disease has reached a somewhat advanced stage. A painless hæmorrhage is very rarely if ever the earliest sign. The bleeding is almost invariably preceded, and sometimes for a considerable time, by signs of obstruction, by pain or irritation of the bladder." Opposed to this is the experience of the French school and of other English surgeons, whilst Stein appears to agree in the main with Thompson.

Reference to the table above, shews that 68 patients suffered from hæmaturia out of 86 who were the subjects of sarcoma and carcinoma, and in 58 of these, hæmorrhage was the first symptom mentioned. From this it will be gathered that though hæmaturia commonly occurs in malignant tumours, and in the majority of cases as the first symptom noticeable, yet in both respects patients with papilloma suffer in a much higher degree. Whilst, however, papilloma gives rise to bleeding, which is at first, and often for long afterwards, unassociated with pain or difficulty in emptying the bladder, both these troubles speedily arise in the malignant growths in a majority of cases. The source of the hæmorrhage in sarcoma and carcinoma is either the papillary surface found on a considerable number of each, or destruction of the growth by ulceration.

Leaving now the frequency of the hæmaturia, we come to its general characters, one of the most noticeable of which is intermittence. At first it appears as a transitory and generally as a very mild attack, without cause, without pain, and it disappears as suddenly as it came, perhaps existing only during one or two micturitions ; after a time the incident is almost forgotten, when, it may be some weeks or months later, another attack supervenes of greater severity and longer duration. Again, there is cessation, with future recurrences; the intervals between which as a rule become shorter and shorter, whilst the duration of the hæmorrhages becomes more and more prolonged. Even then, the character of the hæmorrhage is most capricious, to-day severe, to-morrow slight, and the urine which in the early morning is as dark as blood itself, may in the afternoon be only just tinged with colour. After the course above depicted has existed for months, or years more commonly, the bleeding may become almost continuous for weeks together, but by this time other symptoms will have been added and that early, if the tumour be malignant.

The intervals between the attacks allow of recuperation, or else the lives of many patients would be cut short by the immediate effect of the hæmorrhage; as it is, fainting may be induced if the sufferer get out of bed during a severe bleeding, and in a few cases death has resulted directly from a severe and long continued loss.

As has already been mentioned, the amount of blood mixed with the urine is very variable, but when the bleeding is in its severest form it is only equalled by that which occurs in malignant growth of the kidney or by the loss, such as I have twice observed in hæmo-philic patients.

If the vessel into which the patient has made one or more micturitions be examined, the blood and urine appear pretty well mixed together, but if the act of micturition be watched the proportion of blood will often be noticed to increase greatly towards the end of the act, indeed in the early days of the tumour, it is only at this time that a few drops of blood are expelled and the patient may notice a stain of blood on his linen before he observes any alteration in his urine. In the severe attacks a considerable amount of clot is often expelled from the bladder, or it may be formed in such quantity that the organ is unable to void it.

Arising without cause and disappearing as suddenly and without obvious reason for its cessation, the hæmaturia is but little influenced by the circumstances under which the patient exists; movement does not as a rule increase it nor does rest, even in bed, diminish it. Occasionally severe exertion or fatigue from long travelling seems to precipitate an attack, but patients who are free from pain and other difficulties often continue at their work, finding their condition apparently not aggravated thereby. The amount of hæmorrhage is not in any way an indication of the size of the tumour from which it comes, for it may be extremely profuse when the growth is not larger than a filbert, whilst it may be slight when the neo-plasm is of considerable size; lastly, it is most important to remember that not a few cases, nearly one-fifth of all kinds, run their course without hæmaturia occurring at any time, so that the absence of this symptom does not of itself exclude vesical tumour from the diagnosis.

Pain and frequent micturition next demand consideration, and they are so commonly associated and dependent upon the same cause as to make it difficult to separate them. Often they are merely symptoms of the cystitis which complicates many bladder tumours, arising late if at all in the course of the papillomas, earlier and more frequently in the firmer innocent growths, and almost as commonly in the malignant. Cystitis is perhaps more frequently set up in the late stages of papilloma than is generally believed, for it is recorded in 17 cases out of 76. In the malignant growths it attains a higher rate and is of greater severity; the urine becoming loaded with pus, mucus and phosphates and of the most intensely fœtid character, like decomposing fish. Often death is due to this complication rather than to hæmorrhage or the general effects of malignant growth. When cystitis is present the pain varies in its intensity from mere discomfort up to the most extreme agony, it is felt in that common situation the glans penis, in the perinæum and above the pubes. Frequency of micturition too is equally variable, in the early days only breaking the patient's rest two or three times in the night, it gradually increases in frequency to every hour, or even to every few minutes, until what with pain and repeated empty ings of the bladder the patient's life becomes a positive burden to him.

Apart altogether from cystitis, pain and increased frequency both exist however. Even in papilloma dull aching pain may be felt above the pubes or in the perinæum, and if clot forms in the bladder, pain along the urethra will be complained of when the clot is evacuated; but it is in the malignant growths that pain as a symptom is of the highest value, especially when it exists by itself or at all events is not the result of micturition by an inflamed bladder. Under these circumstances, severe lancinating pain, especially if continuous for some time and radiating into adjacent parts such as the thighs and buttocks, is very suggestive of the presence of a malignant growth. Whilst pain however may be evidence of cystitis, or an indication of the presence of a malignant growth, its absence must not be regarded as certain evidence that a tumour is innocent in its character, for some remarkable cases are recorded of malignant formations attaining a great size, during the whole course of which pain was not complained of.

Before leaving the subject of pain, attention must be directed to its presence in the region of the kidneys when hydro-nephrosis or more commonly when pyo-nephrosis exists; the pain is generally of a dull aching character, and is of importance mainly because it may exist when the bladder is free from pain, and in the presence of hæmaturia the kidneys may be suspected as the seat of the lesion. Increased frequency, when not dependent on cystitis, may be due either to the presence of blood in the bladder (and then subsides with the hæmaturia) or to the simple presence of a foreign body in the cavity, especially if the growth be of large size, or even when small, if it involve the parts about the neck Again, many pedunculated growths may cause irritation by impinging upon or entering the internal orifice of the urethra.

When hæmaturia is not the earliest symptom, frequent micturition and pain, either separately or together, may first attract attention; the following table shews with what frequency.

Kind of Tumours.	*No. of Cases.*	*Frequent mict. and pain the earliest symptom.*
Papilloma . . .	76	10
Other Innocent Growths	39	18
Sarcoma . . .	22	7
Carcinoma . . .	64	12
	201	47

Here it will be seen that these two symptoms, more commonly than hæmorrhage, indicate in the first instance the existence of the firmer innocent growths such as fibro-myoma, or of fibro-myxoma. In the sarcomas also they are often earliest noticed, whilst in the carcinomas and papillomas they do not give such early evidence of the presence of the tumour.

On rare occasions retention or incontinence of urine is the first symptom complained of, but commonly they appear secondarily to hæmorrhage or pain. Retention occurs in all kinds of tumours, but usually in those that are pedunculated, owing to the tumour or part of it becoming impacted in the commencement of the urethra, but the formation of clot in the bladder is sometimes the cause of this accident. The retention does not persist as a rule so as to demand the constant use of the catheter, but once relieved may never recur or only after some lapse of time.

The *incontinence* really comprises two conditions, true incontinence and overflow of urine from retention. The former occurs in some malignant growths and is due to the cavity of the bladder being filled by a large tumour mass, or to its walls being rendered so indistensible by the infiltration they have undergone, as to refuse to expand under the slight pressure of the urine, which consequently trickles away as it is secreted. Difficult micturition, in which the patient has to strain much to evacuate his urine, is mentioned as the first symptom attracting attention in about half a dozen cases, but it is more often spoken of as secondary to other symptoms

Sudden cessation of the flow of the urine in the middle of micturition, such as occurs in vesical calculus, happens in a few patients with tumour, and in the absence of stone, as shewn by sounding, this symptom would be of considerable value as it would indicate the presence of a tumour and its probable attachment by a pedicle.

A curious condition was described by Ultzmann, in 1878 (*Ueber Hematurie*), and was regarded at that time as characteristic of "villous" tumour.

The following observation was made in three cases: the urine when passed was very fluid and of a pale yellowish-red colour, evidently containing little blood, it coagulated rapidly into a soft sticky mass, which adhered to the sides of the vessel, and which was quite disproportionate in size to any clot that could have been formed by the blood present and differed from blood clot by the fact of its being rendered fluid by shaking. Ultzmann explains the phenomenon as follows:—the powerful contractions of the bladder in micturition give rise to engorgement of the vessels of a tumour by preventing free venous return, this may lead to rupture and hæmorrhage, or if the tension be less, to escape of the plasma of the blood, which mixing with the urine coagulates when voided. The same explanation probably holds good in those cases where the urine contains much more albumen than the blood or pus present will account for.

Fibrinuria was observed by Stein in a patient suffering from "villous cancer," and a coagulation much resembling it was noted by Neale in a patient with "adeno-encephaloid cancer,"* although here there was more blood. If any conclusion can be drawn from the presence of fibrinuria it is simply that the surface of the tumour is papillary or villous, but it does not follow that the growth is a papilloma.

Attention will now be directed to the detection of fragments of growth passed with the urine, and to another valuable indication of the presence of tumour in the female sex, viz.: protrusion of part of the growth at the meatus.

In the 201 cases of which the histories are recorded with accuracy, fragments were found twenty-nine times, and they were distributed as follows:—In papilloma, 15 times in 76 cases; in fibroma and fibro-myxoma, once in 20 cases; in myoma and fibro-myoma, twice in 15 cases; in dermoid, twice in 2 cases; in sarcoma, once in 22 cases; in carcinoma, 8 times in 64 cases.

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* *Brit. Med. Jour.*, 1887.

Generally the nature of the fragments coincided with the bulk of the tumour from which they were detached, but this was not always so, and in four of the carcinomatous cases at least, the shreds of tissue afforded no evidence of the malignant nature of the tumour, a fact to be borne in mind when giving a diagnosis or prognosis in any particular case. The fragments passed in the case of fibro-myxoma and in Volkmann's myoma enabled a positive diagnosis of the nature of each tumour to be made and in both of the dermoids, hair was passed in some quantity. As a rule the particles detached are of very small size, but they may be sufficiently large to cause great pain as they are forced along the urethra, in which they may possibly become impacted, and it is advisable to question patients on this point as they occasionally remember to have passed bits of "flesh" or "gristle." In the *Edin. Med. Jour.*, 1864, Sanders mentions a case of epithelioma in which shreds of growth, some so large as to be impacted in the urethra, were frequently passed, but the patient never suffered from hæmaturia; this appears, however, to be the only instance of such an anomaly on record. The search for fragments should be carefully made, especially in the deposit at the bottom of the vessel into which the urine is passed, and clots of any size should be broken up by the finger lest they conceal any particles of tumour; should nothing be found the first time, the search should be repeated several times before it is relinquished, as in one of my own cases at least a dozen examinations were made before a fragment was met with. In a few rare instances piece after piece of the tumour has been passed, until, judging from the subsidence of symptoms, a spontaneous cure has resulted.

In using the catheter to relieve retention or for some other purpose the presence of a growth has been accidentally discovered by a fragment catching in the eye of the instrument and being torn away, sometimes with permanent relief to symptoms. Sir Henry Thompson has suggested the use of a small lithotrite to obtain evidence by bringing away fragments in its jaws, or, what appears to be a better method to elicit this positive evidence, he advises that the bladder should be carefully washed out by means of a small evacuating catheter and the aspirator used in litholapaxy; this plan of washing rarely fails in his hand to give evidence of fimbriate papilloma when it exists, but the cystosope has done away with the necessity for such a procedure

Any fragments found should of course be submitted to microscopic examination, not only to determine their exact structure, but also to make certain that the tissue really is part of a tumour and not a foreign body accidentally mixed with the urine. Some of the particles will be altered by necrotic changes and the epithelium will be partly shed, but even then sufficient of the papillary or other structure will be left for recognition under a moderately low power, such as a No. 4 Hartnack.

A word of caution is necessary as to the recognition of loose cells in the urine as "Cancer cells." The epithelium shed from the urinary passages is most diverse in shapes; it may come from the tubules of the kidney, the pelvis, the ureter, the bladder, or urethra; it may be squamous, columnar, spheroidal, or tailed; and if squamous more than one nucleus may be seen in the same cell; further, several cells may be aggregated so as to form a patch. If then any diagnosis of malignant disease is made from these loose elements it is almost certain to be wrong, but the error is not likely to be made by anyone who has been in the habit of examining urinary deposits, as such an one will be familiar with these varying cell forms.

Protrusion of the tumour at the meatus can occur of course only in females, and is the only absolutely certain evidence of the presence of a growth in the bladder; unfortunately it is a rare event, happening only eight times in forty-nine female patients, and contrary to what might have been anticipated the firm broadly-pedunculated tumours are more liable to this accident than the papillomas. Three were fibro-myxomas in children, two were fibromas, two fibro-myomas, and one was a spindle-cell sarcoma. The growth may be extruded during the effort of micturition and then recede, or it may remain permanently in the urethra, and if the surface be cut off a further expulsion may occur. The portion in the urethra and external to it becomes partially strangulated, and cystitis is almost certain to arise if it does not already exist, but the urine generally trickles away by the side of the projecting portion, and retention does not occur. The urethra may undergo enormous dilatation, in fact, in one case it was at first mistaken for the vagina, and in a patient of Godson's the dragging of the tumour had partially inverted the bladder through the canal.

Stein quotes a case recorded by Brennecke in the *Arch. f. Gynækol.*, 1879, which I have not been able to find, but the record is so unique as to justify mention:—A woman at about the sixth month of her pregnancy suffered from intense vesical catarrh and occasionally with sudden stoppage in the evacuation of urine. She was then seized with violent bearing down pains lasting several hours, and finally expelled a fibro-myxoma as large as the kidney of a new-born child, and remained perfectly well afterwards.

PHYSICAL EXAMINATION WITH THE SOUND AND PALPATION ABOVE THE PUBES AND BY THE RECTUM OR VAGINA ACCORDING TO SEX.

The use of the sound gives either positive or negative evidence, each having its own value, although there has been some tendency to depreciate the indications given by this instrument because they are generally of a negative kind. It must however, be borne in mind, that in some of the more obscure cases the surgeon needs all the means at his disposal to enable him to arrive at a correct conclusion, and in such cases the first step is to exclude the presence of calculus which will be only settled by the sound, whether it give any further information or not. Prejudice has been excited against the use of this instrument by the reports of cases in which severe hæmaturia or cystitis has been produced by sounding, and though it is indubitable that death has been hastened thus, yet this calls for great care in the performance of the manipulations rather than for their exclusion altogether. The sound to be used should have the ordinary short beak, and it is best to have at hand if necessary, Thompson's instrument, for the convenience of injecting fluid into the bladder if it be empty and doubt exist whether the sound is impeded by the vesical walls or by growth.

The purposes for which sounding is resorted to are various ; to decide the presence or absence of calculus in those cases where hæmaturia is slight or absent altogether, and the symptoms of "irritable bladder" predominate ; to recognise a tumour if it be of such consistence as to allow of this ; to determine to some extent its site, size and attachment, and lastly, to assist the finger in the rectum or vagina in determining whether any thickening exist about the base of the bladder, when this is not very obvious to external examination alone.

The recognition of papilloma by the use of the sound is rare and uncertain, the sensation imparted to the examiner being described as a "softish feel" or some slight "irregularity," but there is nothing more definite than might be imparted by the muscular fasciculi of a hypertrophied bladder.

The presence of the more solid tumours is recognisable in a greater degree, but even amongst the carcinomas the proportion detected by the sound is not so great as might be anticipated, certainly in nothing like half the cases examined. When the sound enters the bladder it may meet with obstruction immediately and after a little manœuvring pass on to find the posterior part of the cavity free, or it may be deflected entirely to one side of the organ by the prominence of the other, or it may detect only roughness of the surface over a limited area ; such indications as these will give some idea, though not always a correct one, as to the site of attachment. By careful measuring, either with the finger or with Thompson's index on his sound, as in the case of calculus, some idea may be gathered of the size of the growth and possibly of the method of its attachment, whether by pedicle or no. Finally, with the sound in the bladder, the finger in the rectum or vagina is better able to appreciate any thickening that may exist about the base of the organ, than it is when there is nothing opposed immediately to the digit. Considerable hæmaturia arising from careful sounding is to be noted as of importance.

The other method of physical examination, by bi-manual palpation, is of higher value than the use of the sound, as it gives more frequent evidence of the presence of vesical tumour and is practically free from the danger of producing severe hæmaturia or cystitis, although even by this mode of enquiry some bleeding is not uncommonly produced.

Until comparatively recently the bi-manual method of examining has not received the attention it deserves, at least in this country, hence many reports of cases contain no reference to physical examination by double palpation, and only a very cursory one to digital examination through the rectum or vagina alone. For these reasons no accurate idea can be formed of the frequency with which vesical tumours can be palpated, but it may be safely assumed that most of the carcinomas and sarcomas can thus be made out, that many of the firmer innocent tumours can also be recognised and a few of the papillomas, whilst the size of the tumour may at the same time be determined. The method of procedure is as follows :—the patient should be placed in the dorsal decubitus with the pelvis somewhat raised on a pillow, the bladder should be emptied with the catheter, and it is best, though not absolutely necessary to administer an anæsthetic. The left hand should now make firm pressure above the pelvis whilst one or more fingers of the right are introduced into the rectum or vagina, when, unless in patients with deep perinæums and much abdominal fat, a tumour of any size and consistence can hardly escape detection, and a fairly correct notion may be formed as to whether the tumour infiltrates the walls of the bladder after the fashion of the malignant growths, or is merely attached to them; at the same time some idea may be formed of the fixity of the bladder to surrounding tissues, and the opportunity should be taken to examine the lumbar and pelvic lymphatic glands. Palpation above the pubes or by the rectum or vagina alone will sometimes give information, but not so commonly as the bi-manual method, nor is the information so precise.

When all the symptoms have been carefully reviewed and the methods of physical examination utilized the diagnosis of tumour will in many cases be quite clear, and in some such a conclusion be arrived at as to whether operative measures are likely to give relief, but in numerous cases the diagnosis will remain either incomplete or uncertain. That being so we have at our disposal a method of investigation which leaves little to be desired, it is the use of the Cystoscope. It is not required in all cases, in some the constant presence of blood in large quantities prevents a successful inspection with the instrument, but outside these limitations it gives most valuable information. It localises the site of attachment and the method, whether by pedicle or broad base ; in a certain proportion of cases it tells also a great deal as to the nature of the growth, whether it is innocent or malignant, and if there be any doubt as to the route by which removal can best be effected the Cystoscope will clear this up. The use of this instrument does away almost entirely with the washing out for fragments suggested by Thompson, and it must be only rarely that an incision into the bladder for exploratory purposes can be called for. In the female also it can take the place of dilatation of the urethra, which is never quite free from the suspicion of occasionally causing incontinence. Its use also does away with the necessity of sounding.

DIFFERENTIAL DIAGNOSIS.

Under favourable conditions, that is when the symptoms and physical signs are well marked, the diagnosis of vesical tumour is clear, but in some cases the symptoms, principally the hæmaturia, are well marked, but the physical signs are wanting ; in others hæmaturia is absent or scanty, and "irritability" of the bladder is the leading feature, while the physical indications are doubtful. Under these circumstances what diseases are most likely to be confounded with tumour in the bladder? They are several: calculus, cystitis with ulceration, tuberculosis of the bladder, malignant disease of the kidney, renal calculus, nephritis with severe hæmorrhage, and hæmophilic bleeding from the urinary passages.

From stone the diagnosis will depend partly upon the study of the symptoms, partly upon the use of the sound, but occasionally stone and tumour may co-exist, and not rarely a deposit of phosphates occurs on the surface of tumours. The distinguishing features of the two diseases are to be found in the recurrence and severity of hæmaturia in tumour, the bleeding being independent generally of exercise; whilst in stone the hæmaturia is slight, is almost always made worse by movement, and is not specially produced at the end of micturition.

Pain and increased frequency of micturition are present early and fairly constantly with stone, whilst in many tumours they are absent or very secondary in importance, finally, the detection of stone by the use of the sound is conclusive generally, but if the character of the bleeding has been such as to suggest tumour, even though calculous matter be detected, the surgeon should be careful not to exclude growth from his diagnosis, for cases are recorded of tumour as well as stone being discovered when lithotomy was performed.

From cystitis with ulceration, tumour may generally be diagnosed by the definite cause often to be discovered for the origin of the former, by the predominance in it of pain and increased frequency, and by the absence in cystitis of infiltration of the bladder walls as determined by palpation; but difficulty does occasionally arise as in a case under my care some years since. The patient, aged 40, had suffered for months from sharp hæmaturia with cystitis; palpation discovered nothing, and the sound detected patches of calculous matter but no definite stone. Enquiry into the early history shewed clearly that the trouble had arisen when the patient was lying in bed with a fractured femur, when he was unable to empty his bladder.

The history pointed strongly to cystitis, but the bleeding was so severe as to leave room for some doubt which was only set at rest by membranous urethrotomy; this revealed an ulcer two inches in diameter at the base of the bladder, surrounded by warty elevations which microscopic examination shewed to be simply granulation tissue. Drainage of the bladder was followed by complete recovery.

Tuberculosis of the bladder generally gives rise to marked "irritability," which is usually the first and most persistent symptom; the quantity of pus present may be considerable, but blood is present only in traces as a rule; at all events it is rarely seen in such quantity as in the characteristic bleeding of tumours, though this rule is not absolute. The infiltration to be felt at the base of the bladder is sufficient to distinguish between tuberculosis and innocent tumours, although it may raise a suspicion of carcinoma. This may generally be cleared up by observing that tuberculosis of the bladder occurs in young adults while carcinoma is rare at that age; further, there is often evidence of tubercle in other parts of the body.

Three renal conditions may give rise to error in diagnosis; they are, malignant disease of the kidney, renal calculus, and chronic nephritis, when associated, as it is in very rare cases, with severe hæmaturia.

Malignant disease of the kidney causes hæmaturia in about half the patients affected; the bleeding may be most severe, is often intermittent in character, and on rare occasions is the first indication of the tumour.

The blood passing down the ureter may give rise to pain in the region of that structure, or it may irritate the bladder and cause frequent micturition. Comparing these symptoms with those of vesical tumour, it is evident how the surgeon may be misled if he does not use all the diagnostic means at his disposal; it is advisable then to emphasise the facts, that the bleeding from tumour in the bladder is often most marked at the end of micturition, that it can be induced by the use of the sound, that fragments of the tumour may be obtained by washing out the bladder and that the growth may be palpated. Apart however from symptoms, there is usually one physical condition present in malignant growth of the kidney which at once sets the question of diagnosis at rest, it is the presence of a renal tumour. Roberts on this point says:—"Abdominal tumour is by far the most constant sign of renal cancer and usually the earliest one noticed. Out of 64 cases, there were only three in which a distinct intumescence could not be felt in the site of the kidney or thereabouts, and in these three, there was hæmaturia." The use of the cystoscope will generally prove conclusively that the bleeding does not come from the bladder. It is not necessary to dwell on the signs by which a renal tumour is recognised, but a method suggested by M. Guyon and termed by him renal ballottement is worthy of mention. In this, one hand is placed in the loin and the other over the front of the kidney, a firm brusque pressure by the first drives the kidney forwards against the anterior boundary of the abdomen, and its return gives rise to the sensation of ballottement when the organ is enlarged. Guyon also alludes to the value of symptomatic varicocele as indicating the enlargement of the kidney on the same side. If then the symptoms and physical signs be thoroughly reviewed, especially if an attempt be made to elicit hæmaturia by sounding, the grave error of confounding bladder tumour with cancer of the kidney will pretty certainly be avoided.

Renal calculus can rarely be mistaken for tumour of the bladder, never indeed, unless a rare association of symptoms occurs to mislead, such as unusually free hæmaturia with frequent micturition and an absence of characteristic pain; a combination very unlikely to exist, as free hæmaturia in renal calculus is not only very rare, but when it does happen, is generally accompanied by pain, both bleeding and pain being made worse by movement, contrary to what obtains in vesical growth.

At a meeting of the Clinical Society, Feb. 25, 1887, Mr. Bowlby drew attention to three cases of severe hæmaturia in patients suffering from granular kidney; in one of these the bleeding was so profuse as to be mistaken for vesical hæmorrhage.

In two of the three, however, there were general indications pointing to the existence of interstitial nephritis; with the assistance of these, and a careful investigation of the bladder itself, sufficient grounds would be obtained for a correct diagnosis.

Bleeding from the urinary passages in hæmophilic patients is not rare, and it may be both persistent and profuse. There is however, usually a history of other hæmorrhages in the patient which will put the surgeon on his guard as to the nature of the case, and will prevent him from falling into the error of diagnosing vesical tumour. Further assistance will also usually be derived from the fact that the hæmorrhage in hæmophilia is persistent, whereas in vesical tumour it is much more likely to be intermittent.

There remains now for consideration the differential diagnosis between the innocent and malignant growths. How often it is possible to distinguish them before operation the record cases do not state, for even in those where a tumour was diagnosed before operation was resorted to, rarely was any positive assertion as to its exact nature hazarded, unless the presence of fragments in urine made the matter appear certain. There can however be no doubt that in a number of cases, probably in the majority, a correct diagnosis may be formulated as between innocent and malignant tumours.

To determine this question several points need consideration. The first is the hæmaturia; by far the commonest symptom of all kinds of vesical growths, often most severe and originating without obvious cause, yet in one kind of tumour it is more characteristic than in any other, viz. : in the papilloma. Here the bleeding is so essentially intermittent in its early stages (months generally intervening between the earlier attacks), is so rarely associated with pain or increased frequency until a long time after the first hæmorrhage, and the tumour so rarely gives any indication of its presence to physical examination, that an accurate diagnosis of papilloma may sometimes be made even without the aid of that most useful evidence—papillary fragments in the urine, or of the cystoscope. Between the firmer innocent tumours however and the malignant, confusion is much more likely to arise; in both these hæmaturia is not so constant nor so characteristic when present as in the papillomas, and in both symptoms of "irritable" bladder generally arise early. Physical examination, whether by sound or by bi-manual palpation, will usually detect the presence of firm innocent tumours as of malignant.

To distinguish between them great care must be taken to determine whether the coats of the bladder are infiltrated by growth, whether there is nodulation to be made out, whether the bladder walls are fixed to the surrounding tissues and whether the deep lymphatic glands are enlarged; if all or any of these exist, the suspicion, in some cases the certainty of malignancy, will be established; if on the contrary there appears to be no infiltration, and the bladder is not only free from adhesion but its coats can be made to move over the tumour, the presumption of innocency is justified, and this will be strengthened by the cystoscope detecting a more or less pedunculated attachment of the growth. Assistance may be obtained from other factors, as by the presence of fragments of growth in the urine, the protrusion of the tumour at the meatus in women and the age of the patient. With regard to fragments in the urine there is just a word to be said; at times they give positive and reliable information, as for instance in Volkmann's myoma and in one of the patients suffering from fibro-myxoma, in each of which a mass of some size and of definite histological characters was passed. In other cases simple papillary fragments have been passed when the bulk of the tumour was very different—carcinoma, myoma, etc. It is necessary therefore not to let the presence of papillary fragments so influence the judgment as to override strong evidence obtained by physical examination.

The age of the patient is of considerable importance; if it be less than 40 the presumption is strong against carcinoma, though not quite so strong against sarcoma, but the reverse does not obtain; that is, the fact of the patient being over 40 is not sufficient to condemn him as suffering from a malignant growth, for it has already been pointed out that papilloma is not uncommon after that period.

It is very doubtful whether sarcoma and carcinoma can be separated in diagnosis unless the passage of a considerable fragment in the urine comes to the aid of the surgeon. It is well to bear in mind, though, that the sarcomas often exist as firm lobulated masses with some tendency at times to pedunculation, while the carcinomas are sessile, often little raised above the surrounding bladder walls and are more nodular and infiltrating, on the whole, than the sarcomas.

REPORTS OF CASES.

UNDER THE CARE OF GILBERT BARLING, F.R.C.S., SURGEON TO THE GENERAL HOSPITAL.

Cerebellar hæmorrhage in a boy; a history of a fall. Was the hæmorrhage due to the fall?

The following case is one of considerable importance from a medico-legal point of view. The details are as follows: G. R., aged 10, was admitted to the General Hospital on April 21st. It was stated by those who brought him there, that at 1.30 p.m. the boy had gone home complaining that he had fallen off a wall. He had been seen on this wall, and if his statement were correct he might have fallen a distance of four feet at the outside. When admitted very shortly after the supposed fall, the boy was very faint and collapsed. He complained of great pain in the left side of his head, but he could give his name. At 2 p.m. his face was very blue, and his breathing infrequent and shallow. From that time life was only maintained by artificial respiration, the heart going on, but the breathing ceasing unless artificial breathing was performed; death took place at 3.45 p.m.

Report of Autopsy.—Body of well nourished young boy; lips cyanotic; no signs of any external injury to head whatever; no hæmatoma of scalp; no fracture of skull.

Brain.—On removing the dura there was slight congestion of the vessels of the pia, with some very slight hæmorrhage along the sides of the vessels; some slight hæmorrhages into the membranes over the pons and medulla. On opening the fourth ventricle it was found to be filled with blood-clot which was compressed, the floor being bound down by the membranes; it spread upwards into the third and lateral ventricles and formed a cast of them, but seemed to exert no pressure in them; the starting point of hæmorrhage was the middle lobe of the cerebellum; in it was a hæmorrhage about ¾ in. in diameter, ploughing up the cerebellar substance, and extending slightly into both lateral lobes. There was no laceration of the cerebral surface whatever, the vessels at the base were all perfectly healthy, and there was no aneurism or any sign of thrombosis.

Heart.—Two ozs., normal, no hypertrophy of left ventricle.

Lungs.—Right, 11 ozs.; left, 8 ozs.; both normal.

Kidneys.—Each 2½ ozs., capsule stripped readily; cortex and pyramids normal.

Microscopic examination shewed the kidneys to be perfectly healthy.

Spleen.—Four ozs., pale and softish.

After reading the account of the autopsy it will be agreed that if the patient had been an adult and there had been no history of a fall the hæmorrhage would have been regarded as an ordinary cerebellar hæmorrhage due to yielding of the walls of a diseased vessel. The question is, whether the age of the patient and the history of the supposed injury are sufficient to exclude this case from the list of those due to diseased vessels. As far as age goes it is of course a well-recognised fact that hæmorrhages into the brains of young children do occur without any suspicion of violence as their inducing cause.

The next point is, what evidence was found at the autopsy which supported the theory that a hæmorrhage commencing in the cerebellum and following the course of hæmorrhages due to disease of the vessels was really induced by the reputed fall? There was absolutely none. No bruising of the scalp tissues, no fracture of any part of the cranial vault, no bruising of the surface of the brain. Under the circumstances that it is possible for a hæmorrhage to occur from a diseased vessel in childhood, and that there was nothing found at the autopsy indicating that there had been an injury to the head, it seems reasonable to regard this as a case of apoplexy of the usual kind. It is of course possible that the fear of falling or an actual fall on to some other part of the body, not the head, made the heart's action more forcible and thus increased the blood pressure which the walls of the vessel were unable to withstand.

The importance of this case will be realised if we consider for a moment what a difficult position would have been created if the violence had been attributed to some other person and not to a fall.

PERISCOPE.

GYNÆCOLOGY.

BY CHARLES MARTIN, M.B., C.M. EDIN.

Endometritis in acute Infectious Diseases.—Massin (*Archiv für Gynækologie*) gives the results of microscopic examinations in 18 cases in which death had occurred from acute infectious disease In 12, the cause of death was relapsing fever, and in 2 pneumonia, while 2 died of typhoid, and 1 each of dysentery and general peritonitis. He found an abnormal condition of the mucous membrane in all its constituents, viz.: the vessels, glands, and interglandular tissue. In the muscular laminæ of the uterus, alterations were also found.

The vessels of the mucous membrane and of the muscular laminæ were very markedly injected, and in some cases the dilatation of the vessels was so great that rupture had taken place, and blood effusions were found in the matrix of the membrane, and between the muscle bundles. This distension of the vessels, in the majority of the cases, was limited to the veins and capillaries. The character and the severity of the disease exercised a most undoubted influence upon the degree of the vascular distension, and upon the extent of the hæmorrhages. Thus they were most marked where the fever was continuous, as in pneumonia; but in the cases of relapsing fever, hæmorrhages were found only in one half of the cases.

In addition to the hæmorrhages, a diapedesis of blood cells had taken place into the membrane, chiefly limited to its inner layers, but in some cases occupying its whole thickness, and even penetrating into the lumen of the glands.

The epithelium of the glands was affected by cloudy swelling and glandular degeneration; and in the majority of the specimens the natural arrangement of the cells was destroyed, they being separated from the membrana propria, and lying irregularly in the lumen of the gland.

The deep penetration of the glands into the muscular layer, and their striking ramification in the deeper layers of the mucous membrane, observed by Cornil in endometritis, were frequently seen.

In nearly all the preparations, the interglandular tissue was permeated by granulation elements; in some, limited to the neighbourhood of the vessels and around the glands, but in the majority of cases it was of a diffuse character, occupying the whole thickness of the mucous membrane. In addition to the hæmorrhages into the muscular substance of the uterus, there was also infiltration of the connective tissue septa with granulation elements. A considerable proliferation of the perivascular tissue, which was also seen in some of the cases, being a chronic process, had probably no relation to the endometritis.

Massin is of opinion that these alterations represent an endometritis—a hæmorrhagic endometritis—such as Slovjansky demonstrated as occurring in a cholera epidemic.

Ovariotomy during Pregnancy.—Dr. H. Kreutzmann (*Occidental Medical Times*, August, 1892) at a meeting of the California Academy of Medicine, discusses the treatment of ovarian cystoma complicating pregnancy, and relates two cases in which he removed the tumour with success and without interfering with the course of the pregnancy. The first case was that of a primigravid, aged 34, who was found to be about six weeks pregnant, and to have a cystoma of the right ovary about the size of a fœtal head. Abdominal section was performed a month later, and a unilocular ovarian cyst removed, when the uterus was seen to be nearly of the size of a three months' pregnancy. The patient made a good recovery, and was delivered at full-time after an easy labour.

The other case was that of a woman, aged 24, in her second pregnancy, she had gone two weeks over time, and had a large left ovarian cystoma. When this came to be removed, the contents were tinged with blood due to twisting of the pedicle. The patient made a good recovery and was still carrying when she went home.

When a diagnosis of pregnancy and ovarian tumour was made, one of the following courses might be adopted:—(1) Immediate operation; (2) Interrupt pregnancy; (3) Wait till delivery and involution had occurred; (4) Wait, tapping if necessary during pregnancy, and adopt suitable measures at delivery. Dr. Kreutzmann, having regard to the low mortality (6 – 10 per cent.) urges that immediate operation is the best course to pursue, except where the woman is so run down that abortion would probably result, in which case he advises the primary emptying of the womb.

St. Toth (*Le Bulletin Médical*) has operated successfully on three cases of ovarian cyst in which pregnancy was also present, and in eighty two cases collected by Olshausen, death was observed in 10 per cent. of the cases, and abortion in 20 per cent.

Appearance of the Female Urethra.—Ebermann (*Vratch*, No. 14, p. 373) says that, on endoscopical examination, a normal female urethra is characterised by the following features:—(1) The mucous membrane of the canal is traversed with radial folds; (2) the urethral orifice appears in the shape of a darkish spot; (3) with regard to colour, the urethral mucous membrane closely resembles the oral; (4) muciparous glands are invisible.

In acute specific urethritis, the outer orifice of the urethra is found on inspection to be of a dark red colour, with a bluish tint. The walls of the canal are usually tumefied, while, on pressure, a drop of pus may be squeezed out from the meatus. On endoscopical examination the urethral mucous membrane proves to be of a dark red colour and quite smooth.

In chronic urethritis, on endoscopical examination, the urethral mucous membrane is similarly found to be dark and void of radial folds; but it is studded with granulations, which may be either scattered all over the canal or limited to one of its walls. In certain cases there is simultaneously detected clusters of hypertrophied mucous glands, as well as fissures in the vicinity of the neck of the bladder.

Bilateral Tubal Pregnancy.—Boileaux (*Progress*) relates the case of a young woman in which he removed the left oviduct, containing a two-months' fœtus. The patient recovered, and three months later presented a right-sided tubal pregnancy. A second operation was also successfully performed.

Franks' modified Porro.—Dr. Beauchamp, of Aachen (*Archiv für Gynækologie*) reports six further cases, making eight in all, in which the uterus was removed by Franks' modified Porro.

The seventh and eighth were removed in the following manner:—constriction by means of an elastic ligature; incision in the fundus and removal of the child and membranes; inversion of the uterus, first of anterior then of posterior wall, by means of silk threads attached to the margins of the wound and leading out through the vagina, the appendages taking part in the inversion; constriction by means of elastic ligature of the inverted uterus, and removal of it and the appendages 5 cm. in front of the ligature. When the uterus was removed the peritoneum in the centre of the stump was constricted by means of silk threads as a measure of precaution.

The following advantages are claimed for the operation :—(1) its simplicity enables ordinary practitioners to carry it out; (2) the danger of infection is lessened; and (3) the operation requires less time to perform.

Treatment of Pelvic Abscesses by the sacral and parasacral operation.—S. Saxtorph, of Copenhagen, (*Hospitals Tidende*) has performed the parasacral operation, after Zuckerkande and Wölfler, in the following cases :—1. An enormous pelvic abscess, originating from an osteitis, was opened by the parasacral incision in a man aged 21. Twenty five days after the operation there was only a small fistula, which was healed when the patient presented himself three months after the operation. 2. An intra-peritoneal pelvic abscess in a woman, aged 33, who was discharged from the hospital on the thirty-seventh day after the operation with a small granulating fistula, which was closed perfectly seven weeks after the operation. 3. A retro-uterine hæmatocele in a woman, aged 32, in which the sinus ceased to discharge pus the thirteenth day after the operation, and healed perfectly a few days later. Perfect recovery in all three cases.

Amputation of the Sacrum for Posterior Abdominal Section.—After Kraske (*Centralblatt für Chirurgie*) published his method of preliminary sacro-coccygeal resection, Hochenegg and Bardenheuer removed still more of the sacrum, the latter extending the resection up to the third sacral foramina. Rose goes one step further and amputates the sacrum at the level of the sacro-sciatic notch, the second dividing the sacrum at the level of the great sacral foramina, the nerves of the cauda equina being necessarily divided also. Rose has operated six times and found that no particular harm was done by the amputation of the nerves Very good access to the pelvis, and, if the peritoneum is to be opened, to the abdominal cavity, is obtained. In one case of carcinoma of the iliac flexure, the examining hand could readily palpate the spleen! The bleeding from the cutting of the bone (which is done with bone forceps) is remarkably slight, because of the compression of the spongiosa of the bone with the forceps. In the same way the sacral canal is compressed, and the fibrous lining readily unites, so that the extension of an inflammatory process along the canal is thereby prevented.

Rose's cases included three carcinomata of the bowel and three carcinomata of the uterus, that were too far advanced for operative treatment by other methods. One of the cases of the first category and two of the second died.

Vulvitis and Vulvo-vaginitis in young girls.—Comby (*Rev. Mensuelle des Maladies de l'enfance*, January, 1892), has seen 150 cases of vulvitis and vulvo-vaginitis in girls varying in age from a few months to thirteen years. By far the most frequent cause is contagion, not produced so frequently as is usually stated by attempted coitus, but by the child sleeping with a person suffering from gonorrhœa, or by using the same articles of toilet. The writer states that he has known cases to occur from the child being bathed in the water of a bath previously used by a person having gonorrhœa. Mechanical irritation, such as caused by masturbation and oxaluria, is rarely the cause, while one of the eruptive fevers, typhoid, eczema, or impetigo, may originate the trouble.

Prophylactic measures consist in avoidance of contact with those suffering from gonorrhœa, and in institutions thorough cleanliness in regard to urinals, towels, etc.

There is both an acute and chronic variety, the former yielding readily to treatment, while the latter requires vigorous measures. The treatment consists in washing the parts two or three times daily with a bichloride solution of the strength of 1 to 2,000, or of boracic acid solution, 1 to 25, with the after-application of powdered salol. Sulphur baths are to be used three or four times weekly. In the case of vaginitis, antiseptic crayons one-eighth inch in diameter, consisting of cocoa-butter 15 grains, and salol 1½ grains, are to be introduced into the opening in the hymen every two or three days.

Drainage in abdominal work.—Dr. Mordecai Price, of Philadelphia (*St. Louis Clinique*, March, 1892), read a paper on this subject expressing in a most positive manner the opinion that in the practice of his brother, Dr. Joseph Price, and in his own, the excellent results were in a large measure due to drainage. They had employed drainage in over one thousand cases of laparotomy with a mortality, excluding no cases, of not more than one to three per cent. Every form of intra-peritoneal disease, including liver abscesses, abscess of the spleen, disease calling for nephrectomy, etc., was included. They used the glass drainage tube, unless they wished to set up adhesive inflammation, as around a liver abscess, when they employed gauze. The author, Dr. Joseph Price, and Dr. Hoffman, of Philadelphia, took a firm ground in their preference for the glass tube as opposed to gauze packing in most abdominal work; while Drs. Dudley, Boldt, and others, asserted in an equally positive manner that gauze was generally far preferable to the glass tube.

Cæsarean Section for a Giant Infant.—Rochel and Neumer have reported a case in which after version and an attempt at disarticulation had failed, Cæsarean section was performed, by which a child, exsanguine from the attempted disarticulation, was removed, and even then weighed 22½ pounds! The mother sank soon after the extraction of the child. She was aged 40, and it was her twelfth pregnancy and was one month beyond term. These facts are offered as a possible explanation of the condition.

White of egg for sore nipples.—Dr. F. V. Allen (*New York Medical Record*) advocates the painting of the nipples several times a day with the white of an egg. This soothing albuminous covering forms a delicate film over the abraded nipple, and the surface is soon—within a few hours except in severe cases—entirely healed. The application is best made just after nursing, while the nipple is still moist from the child's mouth; and it should be allowed to dry on thoroughly before drawing the clothes again over the breast.

SENN ON THE TREATMENT OF PYLORIC STENOSIS.

BY GILBERT BARLING, F.R.C.S.

Senn, of Chicago, has published in pamphlet form an address on the surgical treatment of pyloric stenosis, with a report of fifteen operations for this condition. He gives a brief description of the changes in the stomach walls, etc., induced by the stenosis, and then, regarding stricture of the pylorus as entirely a surgical condition, he subdivides treatment into (1) operative treatment of cicatricial stenosis of the pylorus; (2) operative treatment of carcinoma of the pylorus.

(1) *Operative Treatment of Cicatricial Stenosis.*—The following description of the production of the stenosis is first given: Cicatricial stenosis of the pyloric orifice of the stomach frequently follows as a remote sequela after the healing of an ulcer or traumatic defect in this part of the stomach. The development of the stenosis is a slow process, as it depends upon the formation and contraction of cicatricial tissue which is produced at the site of the former trauma or ulcer. The formation of an excessive amount of granulation tissue in a surface wound or ulcer of the stomach takes place in consequence of the continued irritation caused by the presence of food and digestive fluids, and on this account cicatricial contraction so often follows the healing of a wound of the mucous membrane or ulcer of this organ. A cicatricial stenosis of the pylorus gives rise to symptoms of obstruction at this point—vomiting, retention of food, catarrhal inflammation followed by progressive dilatation of the stomach. Patients suffering from this affection are usually treated for months and years for dyspepsia or indigestion, until a careful examination of the stomach reveals the existence

of the obstruction and great distention of the stomach, when the diagnosis is often changed to carcinoma of the pylorus. The diagnosis of cicatricial stricture of the pylorus should be based on the clinical history of the case, which usually points to the existence of ulceration months and years before, the use of the siphon stomach-tube, and inflation. The clinical history usually reveals the existence of disturbed digestion years ago, caused by an unhealed ulcer, and later by the gradually increasing obstruction. For a time the compensatory hypertrophy of the walls of the stomach balances the mechanical difficulties caused by the stricture; but when this is no longer the case, the walls of the stomach become attenuated and dilatation of the organ follows as a constant and inevitable result. At this stage the elastic stomach-tube is of great diagnostic value. By its use the overloaded stomach is emptied of its contents and the amount of fluid removed often furnishes valuable information regarding the degree of dilatation, while examination of the contents removed often reveals valuable diagnostic points. After the stomach has been thoroughly washed out, its size and location can be accurately outlined by inflation. Even when the stomach is in a normal condition it can be fully distended by inflation from above, and when the pyloric orifice has been diminished in size, very little, if any, air passes beyond it when the organ is distended for diagnostic purposes. Air should be forced through the stomach-tube slowly and uninterruptedly from a large rubber balloon, until the contour of the stomach can be outlined on the surface by inspection, palpation, and percussion, which will not only accurately indicate its size, but this method of examination will also determine accurately its anatomical location and relation to surrounding organs. When the dilatation is very marked, it is not uncommon to find the axis of the organ changed from horizontal to a nearly perpendicular line, and in such cases the great curvature is often found in the left iliac fossa.

The absence of a tumour in the pyloric region speaks in favour of a cicatricial stenosis, but does not preclude the possible existence of an annular malignant stricture. A cicatricial stricture of the pylorus is almost certain to lead to a fatal termination in from three to four years from marasmus, unless the mechanical obstruction is remedied by surgical interference, as a stricture in this locality always manifests an intrinsic tendency to progressive contraction, and finally completely interrupts the entrance of food from the stomach into the intestines.

The operative treatment of a cicatricial stricture at the pyloric end of the stomach consists in pylorectomy, digital divulsion of the stricture through a wound in the stomach, in the formation of a partly new pylorus by the pyloro-plastic operation of Heineke-Mikulicz, or, in establishing a new outlet from the stomach into the upper portion of the small intestine by making a gastro-enterostomy.

Pylorectomy.—The mortality of pylorectomy, even in the treatment of cicatricial stenosis, has been so great—while the less heroic procedures have yielded equally satisfactory functional results, that we may take it for granted that this operation will be entirely abandoned in the treatment of this form of pyloric obstruction.

Digital Divulsion of Cicatricial Strictures of Pyloric Orifice of Stomach.—Loreta's operation is condemned partly for what are regarded as its inherent dangers as, rupture of the pylorus and dangerous bleeding, and partly from the fear of recontraction of the stricture. From what we know of the fate of stricture of other canals, it is probable that recontraction will usually take place, but Senn appears to us to speak too positively on the point of which he does not seem to have personal experience, nor does he quote that of others.

Pyloroplasty on the plan of Heineke and Mikulicz is warmly advocated. The operation is performed by cutting the anterior wall of the strictured pylorus and extending the incision about an inch towards the stomach and the same distance in the direction of the duodenum. The straight incision in the long axis of the pylorus divides the stricture, and the contracted pylorus becomes the posterior wall of the new pylorus by retracting the margins of the wound on each side, at the centre, with tenacula, and suturing the wound in an opposite direction to the incision, that is, transversely to the long axis of the stomach. The new pylorus is made up of tissue, taken partly from the anterior wall of the stomach and partly from the duodenum, the posterior wall being composed of the narrow, contracted pylorus. In suturing the wound it is advisable to tie the sutures from each angle of the wound, tying the central sutures last. Two rows of sutures, deep and superficial, are employed, the same as in closing a wound of the stomach or intestines. Recurrence of the stricture is a physical impossibility, as the new pylorus is composed mostly of healthy tissue, and the danger attending the operation is not greater than that which accompanies an ordinary intentional wound of the stomach or intestines. Details of two cases are as follows :—

Case 1.—*Cicatricial Stenosis of Pylorus—Pyloroplasty—Recovery.*—The patient, aged 47, had general good health until the early part of the winter of 1888, when she began to suffer with symptoms which suggested the existence of pyloric obstruction. The usual treatment for indigestion proved of no avail. Vomiting at variable periods after eating was a conspicuous symptom, and was always followed by relief. On one occasion meat eaten one hundred hours before was recognized in the vomited matter. Vomiting commenced in March, 1889. The symptoms became greatly aggravated during the month of June. The use of the stomach tube afforded great relief.

The obstruction became rapidly aggravated, so that even liquids were no longer retained in the stomach. The patient's normal weight was one hundred and ninety-nine pounds, of which she lost fifty pounds during her illness.

The operation was performed, July 16, 1889. The patient was thoroughly prepared for the operation by washing out the stomach with Thiersch's solution. The great thickness of the abdominal wall made it somewhat difficult to bring the pyloric end of the stomach well forward into the wound. The pylorus was a circular mass of cicatricial tissue, its lumen not much larger than an ordinary lead-pencil. The incision was carried well toward the stomach and duodenum, in order to obtain sufficient healthy tissue for the new pylorus. The longitudinal wound was transformed into a transverse wound, and united by two rows of fine silk sutures. The lumen of the new pylorus was large enough to admit two fingers. She vomited several times after the operation, but this the patient attributed to the morphia which was administered. For twenty-four hours the stomach was kept perfectly empty. After this time liquid food was administered in small quantities at short intervals. No further untoward symptoms occurred, and the external incision healed by primary intention. Six weeks after the operation the patient resumed her ordinary duties, which consisted of superintending three schools, each fifty miles apart, and the trying task of presiding over two hospitals. Appetite and digestion at this time were perfect. In December the patient was in perfect health and had regained her former weight. At present there are no indications of recurrence of gastric disturbance, and the patient continues her arduous work with the same energy and efficiency as before her illness. It is noteworthy to state that in this case the patient does not recall any symptoms which would indicate the existence of an ulcer of the pylorus at any time before the last illness, and yet it is almost certain that, probably years before, she was the subject of an extensive circular ulcer at or near the pyloric orifice. The stomach was only moderately dilated, and the walls, if anything, were thicker than in a normal condition.

Case 2. — *Cicatricial Stenosis of Pylorus following recent extensive Ulceration—Pyloroplasty without Anæsthesia—Recovery.* The second case of pyloroplasty was a farmer, fifty-one years of age, who was brought to hospital, in Chicago, July 5, 1891. He stated that he had been a confirmed dyspeptic for twenty years. Eight months before his admission into the hospital he suffered great pain in his stomach, which was always aggravated after meals. The pain was associated with a burning, scalding sensation in the stomach, which was most distressing several hours after meals. About this time the patient had an attack of profuse hæmatemesis which almost proved fatal. The diagnosis made at this time was ulcer of the stomach. By restriction of diet, and occasional use of the stomach syphon-tube he obtained temporary relief; but for the last two months he had vomited repeatedly, usually some time after eating. At the time of admission the patient presented an anæmic appearance and was greatly emaciated. No tumour could be detected in the region of the pylorus. Chemical examination of the contents of the stomach revealed the presence of hydrochloric acid. By use of the elastic tube it was ascertained that the stomach held at least twice as much fluid as in a normal condition. From the history of the case, and the symptoms and signs presented, the diagnosis of cicatricial stenosis of the pylorus was made. As the patient was very much debilitated, his pulse intermittent and irregular, no anæsthetic was administered. As in the former case, the stomach was thoroughly washed out with a weak antiseptic solution just before the operation was commenced. The operation was performed on the same day he reached the hospital. The external incision was made through the median line, from the ensiform cartilage to the umbilicus. According to the patient's own statements this step of the operation caused the severest pain. The incision in the stomach and suturing of the visceral wound produced but little suffering. The stomach was found greatly dilated, its walls very vascular and considerably attenuated. The pylorus occupied its normal location, and presented, anteriorly, a tortuous and twisted appearance. The anterior wall presented otherwise a normal appearance. Digital exploration revealed a hard cicatricial mass, involving the posterior and upper part of the pylorus. An incision about two inches in length was made, parallel to the long axis of the stomach, with the strictured portion as the central point. Inspection and digital exploration now revealed a cicatricial mass posteriorly and above the incision, involving about two-thirds of the circumference of the pylorus, the lumen of which was contracted down to the size of a lead pencil, and very much distorted. The visceral wound was treated in the same manner as in the foregoing case. Aseptic gauze was packed around the pylorus, and was kept in place from the time this part of the stomach was brought forward into the wound until the suturing of the visceral incision was completed. During the operation the patient complained of nausea, at the same time violent contractions of the stomach were observed, but vomiting did not ensue. The abdominal incision was closed by buried and superficial sutures. The operation lasted nearly an hour, and after its completion the patient was somewhat paler, but expressed himself as satisfied that the pain inflicted was not as severe as he had expected. Rectal alimentation was relied upon for three days, after which stomach feeding was resumed. The diet for a number of days was limited to liquid articles of food. The highest temperature observed was 99¾° F. The wound healed by primary union, and the patient left the hospital much improved in health at the end of twenty-five days. On several occasions the stomach-tube had to be used after the patient commenced to take liberal quantities of solid food, as digestion appeared to be somewhat impaired. Two months after leaving the hospital, he had gained twenty-seven pounds in weight, and was able to digest all kinds of food without experiencing any distress. Only on a few occasions was the stomach washed out after he left the hospital, for fear that undigested food might aggravate the enfeebled condition of the stomach.

(2) For Carcinomatous Stenosis gastro-enterostomy is the alternative to pylorectomy, and the following is a list of Senn's cases and his comments on them.

TABLE OF THIRTEEN GASTRO-ENTEROSTOMIES FOR MALIGNANT PYLORIC OBSTRUCTIONS.

Case.	Sex.	Age.	Duration of Disease.	Result.	Remarks.
1	Male.	67	1 year.	Recovered	Died five days after operation, of exhaustion.
2	,,	47	18 months.	,,	Improved for several weeks; died of marasmus three months after operation.
3	,,	35	6 ,,	Died.	Immediate cause of death, intestinal obstruction at site of operation; death three weeks after operation.
4	,,	43	1 year.	Recovered	Improved for several weeks; died of marasmus four months after operation.
5	,,	38	6 months.	Died.	Immediate cause of death, perforative peritonitis.
6	,,	69	1 year.	,,	Cause of death, shock, two hours after operation.
7	,,	32	9 months	Recovered	Death from hæmorrhage into the stomach, from ulcerating carcinoma, nine days after operation.
8	Female.	45	1 year.	,,	Died twelve days after operation, from croupous pneumonia.
9	Male.	71	16 months.	,,	Improved for several months, and died of marasmus twenty months after operation.
10	,,	37	4 ,,	Died.	Cause of death. shock, five hours after operation.
11	,,	45	6 ,,	Recovered	Died eighteen days after operation; immediate cause of death, marasmus.
12	,,	35	9 ,,	,,	Improved for several weeks, and died of marasmus three months after operation.
13	,,	44	1 year.	Died.	Died eight hours after operation; immediate cause of death, shock.

Remarks.—Adding the 2 pyloro-plastic operations to the 13 gastro-enterostomies we have 15 operations on the stomach for malignant and non-malignant stenosis of the pylorus, of which number 10 recovered and 5 died, a mortality of 33·3 per cent. Of the 13 operations for carcinomatous pyloric obstruction on as many patients 12 were males and 1 female. The youngest patient was thirty-two years of age, the oldest seventy-one; average

age, forty-six years and ten months. The duration of the disease could only be ascertained approximately, eighteen months being the longest and four months the shortest period intervening between the first manifestation of symptoms and the time of operation; average duration, ten months and ten days. In most of the cases vague symptoms of gastric derangement preceded the actual development of symptoms pointing to pyloric obstruction for several years, months, or weeks. In all of the cases the existence of pyloric obstruction at the time of operation was evident from the complexus of symptoms present at the time, the results of physical examination, and, in most instances, verified by digital exploration of the pylorus during the operation. In only one case was there failure in detecting enlarged lymphatic glands in the vicinity of the carcinoma, and that was the first case reported in which there was an annular malignant stricture without involvement of the serous coat and adjacent lymphatic glands. This would have been a proper case for pylorectomy had the patient's general condition warranted such an operation. In all of the remaining cases the carcinoma was more extensive, and the lymphatic glands in its vicinity infiltrated, and in many of the cases the growth was connected with one or more of the surrounding organs by neoplastic adhesions. In all of these cases the local conditions were of such a nature that a radical operation by pylorectomy was out of the question, irrespective of the general condition of the patients. Analysis of the immediate and remote results of the thirteen cases of gastro-enterostomy shews the following: eight of the patients survived the immediate effects of the operation and five died. Among the recoveries are included all cases in which the immediate cause of death could not be attributed to the operation. [We quote Senn's own words, but without fully accepting them. G. B.] In Case 1, death occurred five days after operation from exhaustion. Nothing occurred that would tend to show that the operation shortened life. The patient was extremely anæmic and emaciated at the time of operation, but he rallied from its immediate effects promptly; the symptoms of obstruction were relieved but he gradually sank, and died five days later from simple exhaustion, due to disease and its secondary consequences, and not to the operation. In two other cases reported as recoveries death occurred in one, twelve days after operation, from croupous pneumonia, in the other, on the ninth day, from hæmorrhage into the stomach from the ulcerating carcinoma; in both instances the external incision had healed, the symptoms of obstruction were removed, and gastric digestion was partially restored. The remaining five cases that recovered lived, respectively, one, eighteen days; two, three months; one, four months; and one, twenty months after the operation, and finally died of marasmus. The most remarkable of these was Case 9, the oldest patient on the list, who had been suffering from pyloric carcinoma for sixteen months, and who at the time of operation certainly could not have lived for more than a few weeks without surgical intervention. This patient recovered without a single untoward symptom, lost the cachectic appearance, gained a number of pounds in weight, resumed and conducted his business for eight months, and died of marasmus twenty months after operation. Billroth makes the statement that in none of his cases of gastro-enterostomy for malignant pyloric obstruction was life prolonged for more than a year after the operation. Two of my patients lived three, and one four months after operation, and in none of them did symptoms of pyloric obstruction appear after the operation. In Case 3, an autopsy was made. The dilatation of the stomach had disappeared, the anastomotic opening was large enough to admit the tips of two fingers, and was lined throughout by mucous membrane. In the five fatal cases death occurred in from two hours to three weeks after operation. In three of these the patients succumbed to the immediate effects of the operation in two, five, and eight hours. One died of perforative peritonitis on the fifth day, and in one death was caused by intestinal obstruction three weeks after operation. In the last case the intestine was attached to the stomach at a point eight feet below the pylorus. At a point nearly in the centre of the opening in the bowel a sharp flexion was found at the autopsy, and in consequence of this flexion the mesenteric portion of the bowel formed a spur, which directed the contents of the stomach into the portion of bowel on the proximal side of the anastomotic opening. In view of the extent of the local disease, the gravity of the secondary lesions due to long-standing pyloric obstruction, and the serious impairment of the general health present in all the cases, the immediate and remote results as given above must be regarded as satisfactory.

The important lesson to be drawn from these cases is not to postpone operative treatment for pyloric obstruction until the patient's strength is so much reduced that death would be likely to ensue from the immediate effects of an operation of even very short duration. In a number of the cases reported above, an operation was advised in time, but was refused until the patient had become convinced by sad experience that it offered the only chance of relief; but in the meantime the local and general conditions had become so much aggravated that the prospects of success were reduced to a minimum. More than one of the patients, when he had reached this desperate condition, threatened to put an end to his sufferings by suicide in case an operation was refused, and this determination more than once turned the scales when there was hesitation to carry into effect their request. Patients suffering from pyloric stenosis must be informed in time of the inefficacy of all methods of treatment short of removal or rendering harmless the obstruction by operative treatment. The results of gastro-enterostomy for malignant stenosis of the pylorus will improve and become more satisfactory as soon as the profession will sanction early surgical interference and patients can be made to submit to it as soon as a positive diagnosis can be made.

Conclusions.—1. Pyloroplasty, as devised by Heineke-Mikulicz, is the safest and most efficient operation for cicatricial stenosis of the pylorus.

2. Pylorectomy in the treatment of carcinoma of the pylorus is a justifiable procedure when the disease is limited to the organ

primarily affected and the patient's general condition furnishes no contra-indication.

3. Gastro-enterostomy by the aid of large, moist, perforated plates of decalcified bone should be resorted to in the treatment of malignant stenosis of the pylorus as soon as a positive diagnosis can be made, and a radical operation is contra-indicated by local or general conditions of the patient.

Full details of all these cases are given, and the whole forms a valuable contribution to the Surgery of the Stomach.

In the *Dublin Journal of Medical Science* for July, 1892, is a paper by Dr. A. R. Parsons on operative interference in perforation of chronic ulcer of the stomach. He reports three cases, in one of which the ulcer was situated in the duodenum, in the other two on the anterior wall of the stomach. The first case was not operated on, as the patient was practically moribund when seen. In the second case the ulcer was "latent," and only a laparotomy with drainage was performed, but the patient died unfortunately, in a few hours, and it was only at the autopsy that the diagnosis was made clear.

The third case was of greater interest. The patient, a female, had suffered from symptoms suggestive of gastric ulcer for some time, and gave a history which pointed to a slight leakage from her ulcer four days before she came under observation with what proved to be a fatal perforation. The abdomen was opened above the umbilicus the same day that this latter accident occurred; and as the tissues were too soft to bear the strain of sutures, the operator, Dr. Ball, was compelled to stitch the ulcer to the lower angle of the skin wound after washing out the abdomen. For some hours afterwards the history was one of improvement; the pain ceased, the vomiting diminished, and the patient rallied well from the shock, but she sank and died on the sixth day.

After pointing out the almost inevitable fatality following this accident and the success which has followed the treatment of perforation from other sources, as the bowel in typhoid, Dr. Parsons urges strongly the necessity for *early* operative interference.

We are, by the favour of Dr. James Murphy, of Sunderland, in possession of some details of an almost successful case of operation for perforated gastric ulcer. It is, we believe the most successful case on record in which the perforated ulcer was sutured, but unhappily the patient died on the eleventh day, apparently from exhaustion consequent on the difficulty of feeding, as the rectum became too irritable to allow of the prolonged use of enemata.

REVIEWS.

CARDIAC OUTLINES FOR CLINICAL CLERKS AND PRACTITIONERS.*

THIS thoughtful little sketch book is evidently the outcome of considerable labour and much ingenuity. As children are now taught geography, so this endeavours to teach cardiac topography, viz.: by a series of outline maps of the chest which are filled in each with one particular portion only of the heart and its surroundings. It is remarkable how this simplification by division of labour elucidates the complex problem of heart anatomy, and stamps its details firmly on the memory of anyone who will patiently go through Dr. Ewart's book. But herein to our mind lies the difficulty. It takes nineteen diagrams and fifty-two pages to describe the mere topography of the heart. Nor is the labour required from the reader by any means of a light nature; constant and careful attention must be paid throughout, if he do not wish to retrace his steps and go over the ground again. For Dr. Ewart has to be ever climbing that great hill of difficulty: to wit, explaining things of three dimensions with the apparatus of two. To us it seems pitiful, that so great ability and such ingenious toil should have been spent on a subject, which every student should have learnt in a far speedier and better way in the dissecting room.

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* Cardiac Outlines for Clinical Clerks and Practitioners. By William Ewart, M.D. Cantab., F.R.C.P.

Dr. Ewart has courageously tried in this work to make up for that great blot on our medical education, which every teacher feels most keenly—the disgraceful neglect which medical anatomy suffers in our anatomical schools. No one feels this more than Dr. Ewart. Let us quote his introduction:—"Most teachers will probably agree with the author in tracing to an imperfect appreciation of anatomical facts a large share of the trouble usually experienced in the earlier stages of clinical study . . . It commonly happens, however, that the student is already cut off from the opportunities of dissecting when a knowledge of visceral anatomy becomes indispensable to him." These are the facts stated courteously, but we cannot help feeling that beneath the courtesy Dr. Ewart shares in the heat of our indignation that such things are so. The real cause of this "imperfect appreciation of anatomical facts," is the custom of our examining bodies, to almost always appoint *surgeons* as their examiners in anatomy.

Dr. Ewart's methods of obtaining his "surface markings" are most ingenious, and on the whole appear to us more accurate than those of any other author with whom we are acquainted.

The remaining one hundred pages of the book are devoted to the description of methods of examining the heart by inspection, palpation, percussion, and auscultation. But here again we cannot help thinking he taxes our endurance a little too greatly, for he refuses to discuss any theories or etiology. For instance, of functional murmurs he merely says they are "due to faulty action of the muscles connected with the valves or orifices; or to faulty quantity and quality of blood (hæmic murmurs). The murmurs usually admitted to be functional are systolic in time, and aortic and pulmonary in site. They are generally considered to be hæmic in origin." And yet a little later he gives an outline for the sole purpose of stating, not of explaining or refuting, Naunqus and Balfour's view of the functional murmur heard at the left base; a view which we should have thought might very well be relegated to the obscurity of historical medicine, and one which it is, at any rate, unwise to place before beginners so prominently and with no explanation.

Again, when speaking of the varieties of the mitral diastolic murmur he disheartens us by adding: "a discussion of the causes of these several varieties would be at the best speculative, and, for that reason alone, ill suited for the scope of this work." We had hoped, and do still hope, that most at least of these causes were well recognised facts in clinical medicine, and that the speculation was confined to their *comparative* efficacy. Surely, too, it is time that we gave up the hæmic theory of functional murmurs: a theory fragmentary and obscure, which no one has ever been able to connect into a logical whole, and which many facts in clinical medicine manifestly contradict. Moreover, we perceive no difficulty in adequately explaining all murmurs that have come under our notice on mechanical grounds alone, though these are not always due to faulty action of the muscles connected with the valves or orifices. We see no reason then, why Dr. Ewart should not have described as clearly and as fully the functional as the organic murmurs, especially as, in our experience, it is these concerning which the student most pertinaciously enquires.

For teachers the book cannot fail to be most helpful, and we strongly recommend each one of these to study it. We have carefully read it through ourselves, and intend to so more than once again, for we have gained much enlightenment from its perusal; but we cannot help feeling that the ordinary student will have to obtain what he can of the knowledge it contains in a speedier and simpler manner.

MEDICAL MICROSCOPY.*

This is intended to be a guide to the use of the Microscope in medical practice; it is, therefore, primarily, a manual of microscopical technique, treating of the application of the microscope to the study of disease. The author, however, in his preface, seems modestly to limit his field of operations in this somewhat wide area. He says that it is beyond the scope of the work to give descriptions of all the pathological changes found in the different organs. How best to handle the microscope as an aid to diagnosis is, in short, the avowed object of the writer; and morbid histology, histo-chemistry, etc., receive attention only in so far as they help in this direction.

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* Medical Microscopy; A Guide to the use of the Microscope in Medical Practice. By Frank J. Wethered, M.D. Lond. London; H. K. Lewis.

In the chapter on the choice of a microscope the intending purchaser is recommended to get one with a small stand, because the large or binocular instruments are cumbersome and have a bewildering number of screws about the stage. But surely, even granting that a mechanical stage is unnecessary (*pace* Dallinger !), there ought always to be a sufficient space beneath the stage for the effective working of a good achromatic condenser—and this means a large instrument. Small stands have no advantage beyond that of portability, whilst they have many defects—accessory apparatus cannot be added to them from time to time, nor can micro-photography be undertaken.

A "second condenser" is mentioned as being often supplied with the microscope, and is condemned as useless. The use of the term "condenser," in this sense, is objectionable, as it is evident that the "bull's-eye" is the superfluity here so unceremoniously dismissed. Those who work by artificial light (as many must do in the long winter months) find that the "critical illumination" obtained by a judicious use of bull's-eye lens and substage condenser is of the greatest possible value, and in photographing simply indispensable. It is absolutely essential however that this piece of apparatus be used in the manner so clearly described by Mr. Nelson in the Journal of the Royal Microscopical Society.

The various methods of hardening, imbedding, cutting, and staining material, are well described; the most useful of these being given in detail. Staining in picro-carmine and mounting in Farrant's fluid, as a method easy to learn and of almost universal applicability, hardly receives the commendation it deserves. The examination of urinary deposits is carefully explained, and the various formed elements likely to be met with enumerated and figured. On page 181 amyloid casts from the kidney are said to vary in diameter from the width of a red corpuscle to "almost an inch in breadth." Is not this rather broad for a cast? In the diagnosis of pus cells the old test of acetic acid to bring out the nuclei still survives. Yet it is much easier to make evident the said nuclei by placing a drop of aniline dye at the edge of the cover-glass. And this, too, will often reveal groups of micro-cocci otherwise invisible.

The chapters on the examination of fæces, sputum, vomit, etc., are fairly complete, and the micro-organisms found in each are dealt with.

Under the heading "Examination of Blood," it is pleasant to note a description of the Thoma-Zeiss hæmocytometer, a little instrument to be bought for twenty-eight shillings. The Gowers apparatus for corpuscle counting is so expensive that the author has done a service to poor students and workers by drawing attention to its cheaper rival.

The final chapter of the book is devoted to a short account of bacteriological methods. The writer laments the difficulty he finds in giving an intelligible description, in a limited space, of the innumerable delicate manipulations which have to be learnt, and advises a course of lessons in a laboratory! Alas! to most of those for whom such a book as this is written such advice will be useless. Men in active practice cannot leave their "bread-craft" to take care of itself whilst they attend laboratories. Yet let no one despair. Instead, let the anxious enquirer purchase "Salomonsen's Bacteriological Technology," and read therein what can be done with a few biscuit tins, capillary tubes, and clean bottles!

On the whole "Medical Microscopy" may be recommended as a useful book to students and practitioners who know little of histologic methods. Many such are eager to improve their knowledge, but the thought of the ponderous text-book is too much for them.

GUY'S HOSPITAL REPORTS.*

THE current number of Guy's Hospital Reports, under the able editorship of Mr. Davies-Colley and Dr. Hale White, is quite worthy of the magnificent series to which it belongs. Guy's has suffered cruelly by death, and most of the familiar names are no longer to be met with, but there is a young generation growing up which will, we doubt not, worthily maintain the prestige of this great school of medicine. The volume contains among others a paper by Dr. Hale White on the Treatment of Chlorosis by Hydrochloric Acid, in which he concludes, as might have been expected, that this drug will not cure chlorosis; but the paper would have been better if some attempt had been made to determine whether there was any deficiency of hydrochloric acid in the gastric juice in the cases treated. Mr. H. J. Campbell has been led by his observations on the localisation of tubercle in the lungs of monkeys to infer that the reason the apex is the seat of election in man is because in him that part of the lung is extra thoracic, exposed to the atmospheric pressure and therefore aërated with difficulty; he also suggests that the disappearance of the physical signs of tuberculosis of the apex after the supervention of emphysema is due to the rising of the clavicle and first rib and the retraction of the apex into the chest. There is a very full account of the morbid anatomy of leprosy by Dr. Beaven Rake which will constitute a standard work of reference to those who wish to obtain information on this subject. Dr. Silk argues in favour of the theory that smallpox is a surface mycosis. Drs. Perry and Shaw have communicated a valuable pathological paper on fifty cases of malignant disease of the stomach, which contains matter of value to teachers and writers on this subject. Dr. Taylor has a long paper on Malignant Endocarditis, and publishes a case of actinomycosis of the lung. Mr. Davies Colley an excellent and successful case of intestinal resection and implantation after the sloughing of an inguinal hernia. There is also a paper on the Volumetric Determination of Uric Acid in the Urine by Mr. J. Gouland Hopkins which we should not like to leave unnoticed, as although the method must be tested by others, it seems to be one which is more available for clinical purposes than any hitherto proposed. We are very glad to see so much evidence of practical and scientific ability among the new generation of Guy's men, and congratulate them heartily on their present effort.

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* Guy's Hospital Reports. Vol. xlviii. London : J. & A. Churchill. 1892.

ANNUAL OF THE UNIVERSAL MEDICAL SCIENCES.*

THE fifth series of the annual, which contains the gist of the contributions to the current medical literature of 1891, is a worthy fellow to those which have preceded it. The work of collating and of editing this vast material must be enormous, and on the whole we can congratulate the editor and his assistants on the success of their efforts.

The present issue is comprised in five volumes, each containing several hundred pages. It is evident that it is impossible within the limits of this notice to attempt a critical review of a compilation of this kind; all that can be done is to notice its general features.

From the number of those engaged on the work it is evident that the work is thoroughly catholic in its spirit; most of the subjects are prepared by a different author, and amongst them are names which have gained the confidence of the medical world and are quite representative in the subjects they treat of. At the end of each volume there is not only an index to the volume but a complete reference list of journals referred to in the text, a most valuable addition.

The print is excellent, the illustrations are on the whole very good, and the binding is all that can be desired.

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* Annual of the Universal Medical Sciences, a yearly Report of the Progress of the General Sanitary Sciences throughout the world. Edited by Charles E. Sajous, M.D., and seventy associate editors, assisted by over two hundred corresponding editors, collaborators, and correspondents. Illustrated with Chromo-Lithographs, Engravings, and Maps. Philadelphia, etc.: The F. A. Davis Company.

Whilst all practitioners will be glad to possess this valuable work it appeals most strongly to those living in the country and who have not access to a medical library. Here they have a complete compendium of the most recent advances in medicine, sifted and presented to their notice by those competent to judge of the merits of the material, which is ever crowding on the attention and which becomes almost embarrassing from its bulk.

REPORTS FROM THE LABORATORY OF THE ROYAL COLLEGE OF PHYSICIANS, EDINBURGH.*

THERE is no falling off in the interest of the contents of the fourth volume of the Laboratory Reports from the Edinburgh College of Physicians, indeed the individual papers seem to us to be of even higher average merit than before. No doubt the work contained in them has been for the most published elsewhere, and this is not a matter to be regretted, as it is desirable to make known good work by all means, though the present volume is a very handsome form in which it can be permanently preserved. We cannot enumerate all the contents of this volume, but we may draw attention to Dr. Webster's researches on the Anatomy of the Female Pelvis, those of Drs. Hart and Gulland on the Placenta, Dr. Noel Paton on the Heart Valves, on the Bile, and on a Crystalline Globulin in Urine (in conjunction with Dr. Bramwell), a study of the Mechanism of Brain Injuries by Dr. Miles, and of Cystic Kidney by Dr. Pritchie. The volume is copiously illustrated by plain and coloured plates, and, like its fellows, is handsomely printed and bound. This series of reports is an excellent proof of the good work done in this laboratory, and is in every respect worthy of the great reputation of the Edinburgh school of medicine.

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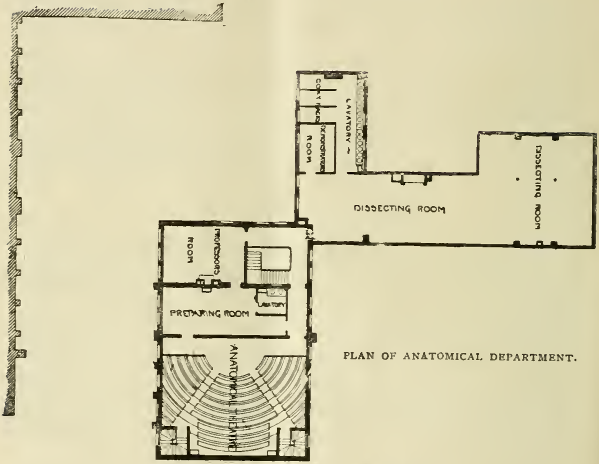
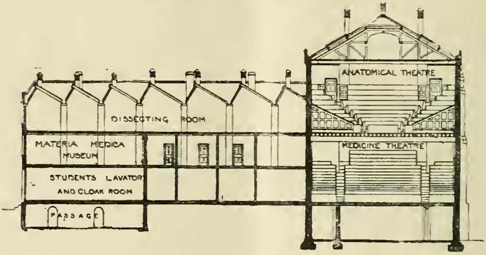
* Reports from the Laboratory of the Royal College of Physicians, Edinburgh. Edited by J. Batty Tuke, M.D., and D. Noel Paton, M.D. Vol. iv. Edinburgh and London: Young J. Pentland. 1892.



PLAN OF ANATOMICAL DEPARTMENT.



SECTION OF NEW BUILDINGS.

EXTENSION OF MASON COLLEGE, BIRMINGHAM.

On and after the 30th of September, 1892, the Faculty of Medicine, hitherto forming part of the Queen's College, Birmingham, will be housed in Mason College, to which College the Faculty has been entirely transferred.

The new buildings for the Medical School form two attached blocks separated from the existing College by a quadrangle, but communicating with it by a covered and enclosed bridge, which crosses the quadrangle and forms a continuation of the main central corridor. The buildings of the College now extend from Edmund Street, where is the principal entrance, to Great Charles Street, where there is an entrance to the Medical School only. The new buildings cover an area of about 12,000 square feet, and include a very complete, spacious, and conveniently-arranged set of rooms fitted up with every necessary modern appliance for carrying on the work of the school.

The arrangement of the plan is L shaped, one of the blocks containing on the Basement floor a gymnasium and other rooms; on the ground floor a Medicine Theatre 52′ 0″ × 45′ 0″ with seats for 326 students, and over it, on the first floor, an Anatomical Theatre 45′ 0″ × 36′ 0″ with seats for 230 students. Adjoining each Theatre are convenient preparing and Professors' rooms and lavatories. The theatres are approached by ample staircases of stone and iron, and every part is well lighted.

The other block contains the working rooms and museums hereafter more particularly specified. In the Basement are spacious Anatomical Stores approached by a subway, servants' latrines, chamber for the heating apparatus, and several spare rooms, all entered from the quadrangle.

The ground floor is entered from Great Charles Street, and on one side of the entrance hall is a room 44′ 0″ × 13′ 6″ for students' lavatories and lockers, and on the other side the Deans' room, the staircase, hall, &c. Further down the corridor are the Janitor's rooms and yard, and beyond, near the Medicine Theatre, is the Pathological Museum 47′ 0″ × 45′ 0″, lighted from the top over more than half its area. Near the end of the Medical corridor is the staircase by which the theatres are approached. On this floor also are latrines for students and for professors, and a hall from which the bridge to the old College is entered.

On the first floor are Materia Medica and Anatomical Museums 35′ 6″ × 32′ 0″ and 46′ 0″ × 20′ 0″ respectively, and, adjoining the lift, the preparing rooms and a Demonstrator's room. On the same floor, adjoining the Theatre block, are a Public Health Museum and a Bacteriological Laboratory.

On the second floor is the Dissecting Room, 91 feet long by 21 feet wide, extending in one part to 34 feet wide, and with an area of 2,180 square feet, and adjoining are the Demonstrators' room and the laboratory and coat room. The whole of this department is lighted from the roof, the lights having a nearly North aspect. The walls are lined with white glazed tiles, and the floor is of Seysell asphalte with falls and surface gutters to the drains, so that the whole of the roof, walls, and floor, can at any time be washed from a hose-pipe.

The rooms and corridors are to be warmed by a low pressure system of hot-water pipes by Messrs. Haden and Sons, of Trowbridge, and ventilation of the most ample kind will be provided by the Climax Ventilating Company. Messrs. Jethro A. Cossins and Peacock, of Colmore Row, Birmingham, are the Architects, and the work is being done by contract by Messrs. W. and J. Webb, of Great King Street, Birmingham.

The Winter Session was opened on the 30th ultimo, when Sir George Humphry, M.D., F.R.S., F.R.C.S., delivered an Inaugural Address. A Conversazione was held in the College in the evening.

Local Notes.

Mason College.—At a recent meeting of the Council, Dr. Kauffmann, Physician to out-patients at the Queen's Hospital, was appointed Lecturer on Practical Pathology. At the same meeting Mr. G. Heaton, F.R.C.S., Assistant Surgeon to the General Hospital, was appointed Assistant Curator and Demonstrator in the Pathological Museum.

Medical Magistrates.—The following names were among those recently added to the list of Justices for the City of Birmingham: Dr. E. T. Griffiths and Dr. Charles Warden.

New Inventions, Drugs, etc.

SOUVENIRS OF THE NOTTINGHAM MEETING. — We have received from Messrs. Burroughs, Wellcome and Co. two beautiful photographic souvenirs of the recent British Medical Association Meeting at Nottingham. We are asked to mention in the columns of our journal that Messrs. Burroughs, Wellcome and Co. are willing to send one of these souvenirs to any medical man upon request.

FERRUGINOUS TABLOIDS (Burroughs, Wellcome and Co).— It is evidently the desire of the physician to secure for administration to his patients a preparation of Iron which is easily and perfectly assimilable, which will not derange the digestive functions, and further, which will not blacken the teeth. These Tabloids are said to answer fully all these requirements. In preparing the Tabloids the makers have followed the suggestions of Professor Niemeyer in opposition to the huge boli recommended by Dr. P. Blaud. The ingredients of the formula are said to be kept in perfect condition until the Tabloid reaches the stomach, where it quickly decomposes and the ferrous carbonate passes off the surface as formed. Upon wetting the surface of the Tabloid the formation of the green ferrous carbonate is at once apparent. Tabloids of Blaud's pills can be administered to the most fastidious patients, as in consequence of their form and size they should be taken without the slightest difficulty.

RESORCIN TABLOIDS. — We have received from Messrs. Burroughs, Wellcome and Co. a sample case of their Tabloids of Resorcin, containing three grains each. Resorcin is employed in Lupus, Epithelioma, Cancer, fermentative Dyspepsia and consequent Diarrhœa. The Tabloids are readily soluble in water; solutions can be used for topical application, subcutaneous injection, or as a draught.

ICHTHYOL TABLOIDS.—We have also received specimens of Messrs. Burroughs, Wellcome and Co.'s Ichthyol Tabloids. These Tabloids contain 2½ grains of the Sodium Sulpho-Ichthyolate, and for the internal administration of Ichthyol are recommended as superior in every respect to pills and capsules. They are readily soluble and the disagreeable odour of the ichthyol compound is perfectly covered by the coating of sugar. Ichthyol is largely employed in the internal treatment of those skin diseases in which hyperæmia and enlargements of the capillaries occur, and in vascular enlargements of all types. Its use has also been advocated in acne rosacea, acute and chronic rheumatism, bronchial asthma, chronic catarrh of the stomach and intestines, scrofula, and many other affections of the skin and mucous surfaces.

New Books, etc., Received.

A Manual of the Operations of Surgery. Illustrated. By JOSEPH BELL, M.D., F.R.C.S. Edin. 7th edition. Edinburgh : Oliver and Boyd.

A guide to the Examinations in Sanitary Science, Public Health, and State Medicine. By HERBERT JONES, D.P.H. Camb. London : Baillière, Tindall and Cox.

Keep your Mouth Shut ; a popular Treatise on Mouth Breathing. By FRED. A. A SMITH, M.D., C.M. Glasgow. London : Baillière, Tindall and Cox.

⁂ Authors can have reprints of articles at the following rates :—

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NOTICE.—*All Communications should be addressed to the Printers and Publishers, Messrs. Hall and English, 71, High Street, Birmingham.*

THE

BIRMINGHAM MEDICAL REVIEW.

NOVEMBER, 1892.

ORIGINAL COMMUNICATIONS.

CLINICAL LECTURE ON INSULAR SCLEROSIS.*

BY ROBERT SAUNDBY, M.D., F.R.C.P.,
PROFESSOR OF MEDICINE, MASON COLLEGE ;
PHYSICIAN TO THE GENERAL HOSPITAL, BIRMINGHAM.

Gentlemen,

The patient you have just seen illustrates very admirably the fully developed stage of the disease which goes by the name of multiple, disseminated, or insular sclerosis, or *sclérose en plaques.* Her history is very instructive and is briefly as follows :

Maria L., 23, button polisher, was admitted into the General Hospital on August 24th, 1892, complaining of giddiness and difficulty in walking, which had been coming on for two years.

Family History.—Her father and mother and a large family (12) of brothers and sisters are alive and well. No evidence of any tendency to nervous disease could be obtained. Her general surroundings at home and at work have been favourable.

Previous History.—She says she had a serious illness as a baby, but she does not know what it was. When she was about fourteen years of age she began to suffer from giddiness and buzzing in the head as she went to her work in the morning. After her head got better her limbs became weak and almost useless, and she lost the sense of taste. She was treated and recovered. A year later she was sent to me by Mr. George Jones, and she then presented all the symptoms of functional spastic paraplegia. Her legs were fully extended, rigid, and adducted, while the patellar reflexes were exaggerated. I regarded the case as hysterical, and her speedy recovery under Weir-Mitchell treatment and douches served to confirm that opinion. In the course of the following years she consulted me occasionally for slight and temporary ailments, but on the whole she kept well and was able to do her work with ease and comfort until two years ago, when she complained of loss of power and numbness, first in the right leg, then in the right hand, and afterwards in the upper and lower extremities on the other side of the body. She was admitted into hospital and again treated in the same way with apparent benefit. But after her return home she got gradually worse and has never been able to work regularly since that time. About last Christmas her condition became decidedly aggravated and she was attended at home by a doctor from the Dispensary, who ultimately advised her to obtain admission into a hospital. In June she went into the Queen's Hospital where she was detained for a month, but returned no better, and shortly after she sought and obtained readmission here.

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* Delivered October 10th, 1892.

Present condition.—Patient is a well-nourished well-developed girl of fair complexion. Her eyes look heavy as if there was some degree of ptosis. Expression cheerful. T. 99°, P. 80, R. 20. No dropsy, cyanosis, or skin eruption.

Alimentary system.—Lips a good colour; teeth sound and well-shaped. Tongue indented at edges, but clean. Appetite poor, no thirst. No pain or discomfort after food. No vomiting, but she states that she was sick in previous attacks when her head was bad. Bowels rather confined. Abdomen somewhat prominent, but everywhere resonant on percussion. Liver dulness in V. M. L. four inches.

Circulatory system.—She has no precordial pain, palpitation, or dyspnœa. Apex beat in 5th I. S. ¾ in. internal to V. M. L. Heart not enlarged; sounds normal. Pulse 80, full, regular, soft.

Respiratory system.—Chest well-formed, expands equally and well. No cough. Respirations 20, easy and regular. Percussion note and voice and breath sounds everywhere natural.

Urinary and Reproductive system.—No pain or difficulty in micturition. Urine 1010, acid; a very faint haze of albumen; no blood or sugar; deposits mucus. She menstruates regularly every month.

Nervous system.—Intelligence and memory seem quite unimpaired; patient's disposition is patient and amiable. There is some drooping of the upper eyelids, already mentioned, but she can raise them when asked to do so. Well-marked nystagmus occurs when the ocular muscles are strained by directing the eyes upwards or outwards as far as possible or by converging to a near object. Her eyesight is very defective, as she can no longer see to read at all, and objects at a little distance are confused. Ophthalmoscopic examination shews pallor of both optic discs.

She told us she lost the sense of taste in her first attack, but it has since returned, and at the present time this and the other special senses appear to be normal. Her speech is very slightly affected, but she says it has been worse; it certainly does not present the typical scanning character, but is a little slow and hesitating. She complains of frontal headache and giddiness. Her legs and feet feel numb, and so does the palm of the left hand; there is no analgesia but tactile sensation is diminished in the forearms and hands, legs and feet. There is some loss of muscular sense, *i.e*, of the sense of weight. When lying in bed there is no tremor, but on attempting to perform any voluntary movement it comes on and rapidly increases to such an extent as to make any combined action quite impossible, so that she cannot feed herself or fasten her dress. The muscles are not wasted and respond well to the faradic current.

Plantar reflexes present, not increased. Ankle clonus present on both sides; patellar reflexes greatly exaggerated. Legs rigid; standing and locomotion impossible without assistance. When lying at rest she sometimes gets involuntary spasmodic movements of the arms, legs, or trunk.

This case has been kept in the hospital, although we have little hope of benefiting her by treatment, in order to give you an opportunity of seeing and studying an example of a somewhat rare disease which often presents, as in this case, great difficulties of diagnosis, especially to anyone who is not on the alert to detect it in the early part of its course when its anomalous and vague symptoms do not suggest serious organic disease.

Insular sclerosis consists essentially, as its name implies, in the formation of patches of interstitial inflammation in the nervous tissues of the brain and spinal cord, or of one of these centres. When it affects both, as in the present example, it is called *cerebro-spinal*, when only a single organ, it is called *cerebral* or *spinal* as the case may be The extreme variability of its symptoms and the irregularity of its course are due to the want of uniformity in the distribution of the nerve lesions and to the fact that the sclerosis impairs but does not always destroy the tissues invaded, so that there are intervals of apparent recovery and it is only when the disease has become advanced and widely spread that it gives rise to permanent functional troubles which permit us no longer to doubt the existence of organic changes in the nervous system.

The disease is sometimes hereditary, but according to Ross its transmission is always indirect, so that unless we can obtain a more full account of the family history than is usually possible, it is easy for us to overlook this cause. It occurs in youth or middle age, and in a considerable proportion of cases in young children under ten years of age. The female sex seems most liable to its attacks. Very varying exciting causes have been assigned to it—cold and damp, excessive bodily or mental exertion, great emotional disturbance, traumatisms, blows on the head, railway injuries, etc. The commencement and course are, as has been already stated, exceedingly irregular. The cerebro-spinal form may begin with symptoms referred either to the brain, such as headache, giddiness, tremors, impairments of speech or special sense, or to the spinal cord, paresis, ataxy. neuralgic pains, etc.; while the purely cerebral and spinal varieties commence in a similar way, their differentiation being determined by the presence or absence of symptoms attributable to an affection of one or other centre.

Dr. Buzzard* has lately drawn special attention to the manner in which the earlier stages of this disease simulate hysteria. He writes—"I was long ago indebted to an article by A. Pitres, for hints regarding the insidious modes in which this disease might make its approaches, but notwithstanding this, and in spite of all the care which a peculiar interest in the subject has disposed one to take, I am conscious of having made not a few mistakes in diagnosis. From my own observation and from what I have known of the practice of others, I am convinced that a very large number of cases of an early stage of disseminated sclerosis —the stage in which there are probably patches of sub-acute interstitial myelitis—continue to be diagnosed as examples of hysteria or of voluntary simulation." He remarks on the absence at this stage of all characteristic symptoms, and proceeds to relate a number of cases to illustrate his proposition. But we need go no further than our present patient for evidence of its truth. On her first appearance I had no doubt at all of the functional nature of the malady, and this appeared to be entirely confirmed by the result of treatment. Then followed an interval of six years, marked certainly by no special trouble, during which her health was fairly good. Finally the disease set in again with renewed force, and this time it has progressed very steadily. There can be no doubt that we have now to do with an example of insular sclerosis. She has the absolutely characteristic tremor coming on only during voluntary movement, associated with the no less characteristic nystagmus, while the only characteristic symptom which is absent is the scanning speech, but this is caused by implication of the medulla, and as the distribution and extension of the lesion observes no definite rule, we must not be surprised at the absence of some striking features.

The only disease with which it is liable to be confounded is paralysis agitans or Parkinson's disease, a functional affection of unknown origin, and sufficiently common to be familar to all of you. In Parkinson's disease tremor is the earliest and most persistent symptom, but it is a tremor essentially different from that of insular sclerosis. In the former the patient shakes when at rest, but is able to execute combined movements with ease even up to an advanced stage of the malady. One of my patients supported herself as a seamstress for years after the tremor had developed, and it was only when the stage of exhaustion came on that she was obliged to give up her work. On the other hand, as you have seen, this patient is free from tremor so long as she abstains from any voluntary movement, while such attempts are followed by an increasing agitation which renders any combined muscular action impossible. Thus she took hold of the glass of water with trembling hands, but in raising it to her lips she shook it so much that, although only half full, she spilt its contents and had to give up the attempt. This character of the tremor is absolutely diagnostic and makes the recognition of these cases in the advanced stages perfectly easy.

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* On the Simulation of Hysteria by Organic Disease of the Nervous System. London. 1891.

Ross maintains that all examples of the cerebro-spinal form exhibit some evidence of psychical disorder, in impairment of intelligence or memory, mental excitability, or a tendency to laugh or cry without due motive; while others manifest graver mental disorders, melancholia, monomania with ideas of persecution or grandeur, and the patient may fall into a state of complete dementia. I have not been able to observe any of these symptoms in our patient, and I have questioned the intelligent and experienced charge nurse without finding that she has observed anything of the kind. It is of course unhappily possible that this may develope later in the case which has only a too gloomy prospect in any event.

Another important group of symptoms so far absent is that of apoplectiform or epileptiform seizures, closely resembling those which occur in the course of general paralysis of the insane. They are characterised by loss of consciousness passing into coma, with high temperature (104° to 105° F.) and hemiplegia. The coma passes off in a few hours and the paralysis in a few days, though death may occur in the course of the attack.

It is noted that there is no atrophy of the muscles, but this condition occurs late in the disease, as also do affections of the bladder and rectum.

The affection of sight usually amounts only to amblyopia without ophthalmoscopic change. This is due to the fact that the sclerosis of the optic tract impairs but does not destroy the axis cylinders. In other cases, as in this, there may be atrophy of the nerve, but this generally affects one eye and not both. An uniocular central scotoma for white red and blue has been observed by Dr. S. O. Habershon.*

The *course* of the disease is usually long, from five to ten years, and as we have seen, a considerable part of this time may be occupied by an interval of freedom from symptoms. It is unnecessary to insist further on the very grave difficulty presented by such an occurrence in the matter of diagnosis; it is almost impossible to be positive, and so long an interval is enough to discredit belief in anyone's opinion. Dr. Buzzard suggests, as an aid to diagnosis, that the plantar reflex is absent in hysteria, but present in insular sclerosis, and this may prove of service. But the great practical outcome of this study should be to make us more alive to the occurrence of this disease, more cautious in the diagnosis of hysteria, when we have to do with transient and variable paralysis in young persons, and more careful in the opinions we express with regard to their future. Armed with this knowledge and protected by this caution you will be able to confront the difficulties of practice when they appear.

I can say little with respect to the treatment of this affection, as it appears to pursue its course uninfluenced by any remedies we possess. Temporary improvement in the earlier stages follows the Weir-Mitchell method combined with douches to the spine, which have been repeatedly tried in this case.

The ultimate fate of these patients is miserable in the extreme. Unless happily carried off by some intercurrent disease they become helplessly bedridden, incontinence of the bladder and rectum sets in, bedsores develope, the muscles waste, the mind fails, vision becomes more and more obscure, impairment of other special senses may occur, the voice is weakened or lost by implication of the larynx, and the patient finally dies of exhaustion.

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* *Trans. Ophth. Soc.*, Vol. ix., 1889

ON POST-DIPHTHERITIC PARALYSIS;

ITS DIAGNOSIS, AND SEVERITY AT TIMES OUT OF PROPORTION TO THE PRIMARY THROAT CONDITION.*

BY GEO. HYDE MELSON, M.D. (LOND.)

Mr. President and Gentlemen.

While it was my privilege to be Resident Medical Officer to the General Hospital, a case passed through its wards which excited considerable interest, and many points in which were much impressed upon our minds. The notes of this case, having the kind permission of Sir W. Foster, to whom I tender my best thanks, I propose to make the basis for a few remarks upon that most important sequel of Diphtheria—*paralysis.* And I justify myself in saying what I have to on this subject, by the hope, that members of more experience will be thereby stimulated to instruct us from cases that have come under their own observation.

Emma W. was admitted into the General Hospital on September 3rd, 1888, complaining of weakness in her legs and arms, accompanied by sensations of pins and needles. She was 21 years of age, and cook in a comfortable home, where she lived well and was not over-worked. Her family history was good generally; her previous health also good. She had been in service nearly nine years.

Fourteen days before admission she had a sore throat, having caught cold from getting wet, but kept on with her work. There was some difficulty in swallowing during the first week of this fortnight. A week before admission the "cold" as she called it, became worse, accompanied by biliousness. She began then to feel "pins and needles" in her legs, and continued to get worse, until, four days before admittance, she could scarcely walk. Soon the paræsthesia extended to the arms, and she began to lose power over them also. On the day before coming into hospital there was some drawing of the face to the left. Her throat by this time however was better, and the difficulty in swallowing less. During this week she fainted several times, and also suffered from shortness of breath when going up stairs.

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* A Paper read before the Midland Medical Society, January 27th, 1892.

Patient was a well-nourished woman, rather restless, and with drawing down of the left angle of the mouth on speaking. Complexion waxy and lips rather anæmic. Temperature not raised (97·8° F.); she lay on the left side, as lying on the back caused her pain. The tongue was protruded straight. There was some difficulty in swallowing, and milk when swallowed sometimes came down the nose. Fauces dry, and there was at times a choking sensation after food. She complained of a feeling of "pins and needles" in the legs up to the knees, and in the arms up to the elbows. There was no actual pain in arms or legs, but there was some pain at the bottom of the back. No loss of sensibility to touch in either arm; and the grasp of the hands was about equal. In both legs tactile sensibility was impaired She had lost a good deal of power over her arms, and could scarcely move either leg. Pupils equal and reacting to light and accommodation. Patellar reflex not obtained, but there was no ankle clonus. There was some difficulty in micturition. On closing the eyes the eyelids did not completely cover the eyeball.

Circulation.—The cardiac impulse was not very perceptible, and there was a systolic murmur over the pulmonary area of strictly localised character. Heart not enlarged. Pulse 88, regular.

Respiration.—Breathing 26, chiefly costal. Breath-sounds normal.

Urine.—Sp. gr. 1025, acid, no albumen.

For the last two months had menstruated every fortnight; painless, but pale and very scanty. Liver, spleen, and lymphatic glands fairly normal.

The picture presented to us then at this stage is that of a fairly healthy girl, paralysed in her lower limbs almost completely, and partially paralysed also in the upper limbs. Swallowing with difficulty, quite conscious, and with sensation but little affected.

Sept. 6th (three days after admission). Control over bladder and rectum only incomplete. There is pain across the lumbar spine, with tenderness to percussion; no girdle-pain however. Sensation quite good in the legs and thighs. Patellar reflex still absent. No ankle clonus, but the attempt to obtain it causes her pain. Plantar reflex lost. The left side of the mouth is still retracted on smiling, and also, though less markedly, on shewing the teeth. There is pain in the lower limbs on sitting up. The muscles respond to Faradism and Galvanism; the anodal and cathodal contractions being almost equally pronounced.

During the next few days patient remained much the same; but the upper extremities got rather weaker, and there was again some difficulty in swallowing She was now put on a water bed, as there was a threatening redness on the left buttock.

Sept. 14th. Arms weaker and grasp very feeble. No power in the lower extremities. But little pain. Sensation good. Reflexes as before. Facial paralysis less obvious. Breathing of costal type. Redness of buttock better.

By this, then, paralysis had become complete in the lower part of the trunk and legs, and nearly complete in the arms. With this there was little pain or loss of sensibility.

Evening of same day:—About five this evening patient complained of some difficulty of breathing; she was unable to cough when she tried. There was pain "like indigestion," she said, in the chest. In swallowing liquids she choked, but solids were swallowed without producing the same difficulty. A spinal ice bag was now applied.

Later in the evening (8.45) the patient presented a most alarming picture. The dyspnœa became most severe, and this, coupled with the paralysis, *now almost total*, gave the conviction that any moment might be the patient's last.

The severity of this attack passed off in about half an hour, but even then respirations were 40 to the minute and of mainly inferior costal type. Pulse 126, regular. Her general appearance remained good through the attack. No change in the ocular fundus to be observed. There was no more dyspnœa through the night and patient slept two hours.

Sept. 15th. There was another attack of difficulty of breathing lasting half an hour; patient in much the same condition generally.

Sept. 16th. Again only slept two hours through the night. There is difficulty of breathing if lying on either side. Tonsils are enlarged, and there is but little movement in the soft palate.

Sept. 17th Has slept well. Feeling better, and can swallow better. About five in the evening there was another rather severe attack of dyspnœa lasting 30 to 40 minutes. Urine was passed into the bed during this attack.

Sept. 18th. No more attacks of dyspnœa. Woke up in frights several times during the night.

Sept. 19th and 20th. No more dyspnœa.

23rd. But little sleep through the night. Breathing bad at times as it is still this morning. Cannot speak so well.

24th. Breathing with some difficulty and only semi-conscious. Mouth wide open. Resp. 18. No pain complained of, and sensation not affected. There is only slight movement in the legs, toes just able to be moved. She can move the arms imperfectly, and the fingers fairly well. Muscles flabby but not evidently wasted. Face a little drawn to the left side still. Tongue put out straight. No tendon reflex, no plantar reflex, no ankle-clonus. Respiration is costal entirely, the abdominal wall being drawn up during inspiration, shewing paralysis of the diaphragm.

29th. Has been improving. Though there is no movement in the legs, the patient can now hold the feeder and help herself a little. She swallows better and the palate now moves well in articulation.

Oct. 1st. Much the same. Cannot localise as to the position of her legs in bed.

7th. Arms better and stronger, but legs quite powerless yet. Sensation and reflexes as before.

17th. Arms and hands move fairly well. Legs still paralysed.

After this movement gradually returned in the legs so that in another month's time she could move her legs pretty well. No more difficulty in respiration was noted. It was not however until early in January (four months from admission) that she could walk across the ward without support.

She was discharged on February 5th to Weston, and I have quite recently heard of her well-being.

During the case the temperature never reached 100° F. The pulse on several occasions rose to 120, 130, and on one occasion 140 per minute is recorded. Never more than a faint haze of albumen is recorded in the urine reports, the reaction being acid and specific gravity within normal limits.

As to the *treatment* adopted: First came all those attentions, including bed and good nursing, which such a case would receive in a well-conducted hospital. Medicinal treatment mainly consisted of Liq. Strychninæ in gradually increasing doses, these varying from ♍ 2 t. d. s. to ♍ 4 4tis horis; the plan being to add half a minim every second day. Steel was also given. On Oct. 23rd a little Morphia was allowed as patient was complaining of a pain in the back. A small quantity of port wine was allowed at one time, this being the only stimulant used. *Massage* was perseveringly applied through the greater part of patient's latter time in hospital, this commencing on Sept. 27th when it was ordered for the legs.

I have dwelt at some length upon this case, as it seems to me to form a good ground-work for some further remarks upon *post-diphtheritic paralysis*, for such the case was diagnosed; and, after due consideration, there can be little doubt as to the accuracy of this diagnosis.

First, then, let us take the *differential diagnosis*. Next, dwell a little upon this particular case, and its comparison with others of more average type; especially noticing *the severity of the paralysis compared with the early throat condition.* And last, say a few words as to the causation, prognosis, and treatment.

In diagnosing a nervous condition of this kind the first question to present itself is—Have we here an *organic* or a *functional* disorder? Taking Hysteria as a convenient type of a functional condition, I must say that the possibility of hysteria, as an explanation, was very much in my mind. The patient was a young, healthy-looking woman, with a condition presenting great variations from time to time. Moreover, there was a deficiency of will-power so commonly to be seen in hysterical cases. Thus—asked to hold any substance in the hand, there was great inability to do so; but when an extra stimulus was given to the will, as by saying—"Oh, you can do better than that," or, "you did better than that just now," there was greater ability almost at once to perform the act. Then the almost sudden onset of the case in a person distinctly "below par," and the great vagueness of any history of a sufficient organic cause for so extreme a condition; point to a functional, as opposed to an organic origin. Even in taking so definite a sign as absence of patellar reflex as warranting the organic diagnosis, Dr. Bastian says, "No absolute weight can be attached to the absence of knee jerk, as deciding against a functional malady and in favour of organic disease. Too much importance has been attached to this sign." These being his own words in his book on paralysis.

But we must only arrive at the conclusion that a condition is functional when, as it were, forced to do so by the exclusion of all known organic diseases. And here we have—the history of throat affection, though but slight; the regular onset attacking the legs, then trunk, then arms; the presence of some early electrical alteration, and threatening of skin trophic change and bladder trouble. These, added to alteration of reflexes, and as we can now see, looking back at the case, to a definite limited course, enable us to exclude certainly a purely functional origin. In thus excluding a functional source and assigning the bulk of the indications to an organic cause, we may perhaps allow a fringe or margin of changeable symptoms functional in origin.

Having decided against functional paralysis, we must next ask ourselves, have we to do with an organic cerebral, spinal, or peripheral condition? In cerebral paralysis deep reflexes are exaggerated, not abolished. There is often rigidity, and no electrical or trophic changes are present. We should expect the arm more affected than the leg, and a unilateral distribution; together with an apoplectic attack, or epileptiform fit or fits as the commencement. Thus we may fairly exclude a cerebral origin. As, however, various ocular paralyses are common in post-diphtheritic paralysis, we must be on our guard against these receiving undue attention, and thus setting the mind upon a cerebral interpretation of the case.

As to a spinal origin.—In differentiating between a spinal or peripheral origin, these diseases have so many points in common that the exclusion of those spinal affections bearing most resemblance to this condition will perhaps be the readiest mode of diagnosis.

The obscure affection known as Acute Ascending Spinal Paralysis, described by Landry in 1859, presents many points of analogy to this case. In both, all characteristic prodromata may be absent. The paralysis begins in the legs, and slowly or more rapidly ascends, involving feet, legs, thighs, trunk, and arms; much as was the progress in this case. Sensibility remains, and there is no marked elevation of temperature in either. Later, when the medulla becomes involved, difficulties of breathing and swallowing come on much as we saw in our case; it was indeed when the patient had advanced thus far and there were such marked paroxysms of dyspnœa, that the question—Is this a case of Landry's paralysis? became forced upon us. Again, in the cases of Landry that recover, paralysis passes off in the inverse order, from above down, as in this case.

Against this diagnosis however we have the facts that in acute ascending paralysis there are no electrical changes; no paræsthesiæ, such as were pronounced in this case; no loss of control of sphincters, nor any trophic changes such as were threatened here.

Absence of knee-jerk might lead one to think of Acute Anterior Poliomyelitis, or an acute form of Locomotor Ataxia, but a very little consideration will at once serve to differentiate these conditions, and exclude them, with the other organic spinal diseases.

Having arrived at the diagnosis of a peripheral origin, there is only one other form of peripheral neuritis from which we shall have to differentiate our case, and that is—Alcoholic Paralysis.

Alcoholic paralysis assumes two forms—1, the ataxic; and 2, the paralytic proper. The ataxic form we may dismiss at once, from the absence of incoördination in our case. The paralytic form comes in many respects very near to the present condition, and we probably have in each a like cause at work, viz., a poison acting upon the peripheral nerves. Both present a gradually increasing paralysis with loss of patellar reflex, sensory disturbance and more or less qualitative electrical change. Both commence in the legs, and both may give various ocular paralyses. Buzzard says paralysis of the soft palate too, may occur in the alcoholic form.

As distinguishing points between alcoholic and diphtheritic paralysis must be noted the extreme tenderness of the calf muscles in the alcoholic form, so that when the calf is pinched a patient may, as it was graphically expressed to me, "almost jump into the next bed." Again, hypersensitiveness along the course of the nerve trunks, especially the post-tibial, and cramps in the muscles of the calf are marked in alcoholic neuritis. The trunk muscles are less generally affected in alcoholism than was the case here. Changes in the optic fundus too, of the nature of neuritis, have been described in alcoholic paralysis.

In neuritis of alcoholic origin, when advanced, mental symptoms are almost invariably present. There is impairment of memory for recent events, the patient is emotional, there is generally a delusion of having recently been walking long distances, as observed by Dr. Dreschfeld, and there will be a history of dyspepsia and morning sickness most likely. Such are not the characteristics of diphtheritic paralysis. We must not however depend much upon the history of alcoholism itself, this is so often concealed until we are, by having made our diagnosis upon other grounds, in a position to force it from either patient or friends.

Similar forms of paralysis of peripheral origin are said to arise after typhoid fever, small-pox, pneumonia, and some other conditions, where we have had greatly debilitating agencies at work. But apart from the rarity of such origin, the mere fact of some one or other of these diseases in considerable intensity preceding the paralysis, will be enough, with the knowledge that such paralysis may follow, for diagnostic purposes. Paralysis from lead poisoning again would be differentiated by the line upon the gums, and by the fact of the extensor muscles of the forearm being early affected.

Having thus definitely arrived at the diagnosis of post-diphtheretic paralysis, there are some points worthy perhaps of special comment in this case. The onset of the paralysis was early, being, in ten days from the commencement of throat indications, so bad that patient could scarcely walk. Paralysis may be postponed for a month to six weeks, and a period of comparative health intervene after the throat affection.

Sir J. Rose Cormack says that when paralysis comes on early it is slight, and *vice versâ.* This case, however, is not at all in agreement with such a view, paralysis being early, but most severe.

Commonly after some difficulty in swallowing, so that fluids return through the nose, and the palate hangs insensible to stimulation, the eyes are affected, there being double vision and squinting, with paralysis of accommodation. But in this case the eyes escaped completely, a special note saying that they react to accommodation, and there being no note of squinting, and this when some of the neighbouring muscles of the face were picked out, and there was some paresis of the sphincter muscle of the eyelid.

Muscular paralysis generally was very severe in this case, giving the picture of almost total helplessness above described. The legs as usual were the first to be affected, and often the paralysis spends itself upon these, it being more rare for the arms to be involved. In this case, however, the arms were very extensively affected, and the diaphragm paralysed. This paralysis of the diaphragm, no doubt gave largely the alarming aspect the case presented on two or three occasions from urgent dyspnœa. Fortunately, the intercostal muscles remained active, though these may be also affected in some cases. As a consequence of this diaphragmatic paralysis, we may get secondary lung complications, from congestion due to imperfect expansion.

Again, it is but one step further for the heart itself to become paralysed, and such a possibility must never be lost sight of. A marked example of this occurred some twelve months ago in the case of a child in the suburbs dying of cardiac failure quite suddenly, and that after, I believe, a cheerful prognosis had shortly before been given by one of our most competent physicians.

Dr. Broadbent in his little work on the pulse, draws attention to an altered character in the heart-sounds as being often the first recognisable indication of this fatal cardiac asthenia, and preceding, sometimes by 48 hours or more, other symptoms of heart failure. This alteration is the approximation of the second to the first sound in point of time, brought about by failure of the ventricular muscle to complete its systole.

Loss of control over the bladder again shewed the severity and almost complete nature of the paralysis, and is a recognised feature of the severer cases.

The larynx in this case evidently escaped, as there was no stridor and no obstructive interference with respiration. Dr. Wilks has insisted upon the importance of this laryngeal paralysis as accounting for the suffocating dyspnœa often attending the removal of a tracheotomy tube after diphtheria.

The urine in this case never shewed more than a trace of albumen. One fact of great importance cannot fail to be noted in looking through this case more in detail, and that is the extreme severity of the paralysis as compared with the primary throat lesion. The throat affection in this instance was in fact so slight, that one can well fancy it might have been entirely overlooked, unless special attention had been directed to find out if any such history existed. And what more pitiable picture can be presented than that of a practitioner being called to such a case, after paralysis is established, and his mind wandering off into the fields of obscure nervous diseases, endeavouring to find a condition under which to classify his extraordinary case.

How important too does the maxim become of first thinking of common conditions, and only allowing the exceptional when the exceptional is literally forced home.

Dr. Gayton, in the *B. M. J.* for 1890, relates a somewhat similar case of severe paralysis following upon slight primary throat affection. In his case a charge-nurse in the diphtheritic wards, developed loss of power in the arms and legs; the motor paralysis becoming, as he says, "extreme." There was anæsthesia in the legs and arms, several attacks of syncope, albumen in the urine, and various ocular phenomena. Dr. Gayton says, "on being pressed she" (the patient) "acknowledged having had a sore throat some six weeks before, but made no complaint. She also confessed to having seen two very minute patches one on each tonsil. She continued her work in the ward however."

Such cases teach then the importance of careful enquiries for a history of previous throat affection, and might almost warrant a diagnosis by exclusion, where we had a typical paralysis in the absence of other assignable cause.

Into the *pathology* of this condition I shall not presume to enter. I believe, however, it is pretty generally admitted now to be due to the effect of the diphtheritic poison upon the peripheral nerves, and is classed as a multiple peripheral neuritis. It is certainly a condition tending to recovery if only the paralysis be not too general and severe, so that life may be sustained until the effects of the poison have spent themselves.

Treatment by every method calculated to husband and increase the strength of the patient, aided by nervine stimulants and tonics, with perhaps massage and electricity locally, is certainly that most calculated to sustain life until the period of danger is past, and to minimise any after consequences.

SOME POINTS IN THE DIETETIC TREATMENT OF GOUT AND KINDRED CONDITIONS.*

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Mr. Chairman and Gentlemen,

Anyone who has had the opportunity of observing many cases of gout and rheumatism in all their varied aspects and protean forms, must have been struck with the difficulties, in certain cases, that the patients experience in adhering to a prescribed dietary regimen, and often, indeed, no less with the hugeness of the task that their adviser takes upon himself when he formulates the rules by which their food and drink are regulated. The annoying part of this is, that the restrictions, social, moral, and habitual, that exist at foreign watering-places, even to the smallest details, however irksome and trivial they may be, are not only accepted without a murmur, but even anticipated and encouraged by the very class of people in whom the least change in their mode of living at home conjures up all the excuses and remonstrances conceivable. The suggested idea is at first scouted by the patient, then, if pressed, is played at for a few days in an amateurish sort of way, "just to see how he gets on," and is perhaps continued for a short time in a half-hearted manner, until some slight inconvenience gives him the opportunity of proving, as he thinks, how absolutely impossible it is, and then, if the sacrifice is insisted upon, it is fought against tooth and nail; and at last, failing in other arguments, and determined to win the day, he brings his wife, who soon places it beyond a doubt that his present mode of life is the only one compatible with his health. But it is not so much with this aspect of the case that I propose to deal to-night as with the genuine difficulty that is felt in making out a satisfactory diet table for cases where individual peculiarities prevent a restriction in the very food-stuffs which we know ought to be taken in moderation, if not with great sparing, and which we reluctantly find we must give liberally on account of special conditions existing in the case. This kind of case I shall deal with more fully later on.

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If, as is maintained, gout is due to "disturbed retrograde metamorphosis of the nitrogenous constituents of food," which being interpreted means, that instead of urea, uric acid and other less oxidised products are formed, it follows that the condition that we call gout, in all its many phases, and the conditions allied to it, must be influenced by the kind and amount of the nitrogenous food taken, and not only by the kind and amount of the nitrogenous, but, indirectly, by the kind and amount of all foods taken. This is especially so since we know that if the organism cannot get a certain food-stuff for the elaboration of certain tissues it can put up with others, and does so pretty well within certain limitations. But on the other hand too much must not be expected from a change of diet, and certainly not unless the alteration has been carefully thought out and arranged to suit the particular case. I have now two cases under my care which illustrate this:—One, a well-to-do man in the prime of life, who lives well, eats and drinks well, and I may say also, wisely, though well, with plenty of exercise and work requiring much energy, and opposed to any lethargic condition of the system, living in fact what would generally be considered a healthy regular life. The other, an inmate of the workhouse who would not be allowed to live otherwise than regularly if he wanted to, and with regard to whose diet it may be said, that although he does not exactly live well, he lives very wisely, taking the wisdom of the poor law as a standard. Here then are two cases with a dietary diametrically opposed, and both suffer periodically from gout. This shews very plainly that a diet from the point of view of nourishment only, is not everything, and that there can be no gout diet as such, but, that given so many cases of gout there must be a corresponding number of diets, identical only when the cases are identical, and this principally occurs in text-books and not in practice. It will be convenient I think first to review briefly the different classes of food-stuffs in general use as articles of diet, then to consider the causes of gout and its congeners, and lastly to draw some conclusions as to the best method of obviating by means of a changed dietary, the mischief that accrues from the gouty state.

As you will remember, the food stuffs that we use are divided into the following classes: (1) The Inorganic, water and the mineral salts. (2) The Organic with its two great divisions of (*a*) nitrogenous substances, comprising the albumens and gelatins, and the (*b*) non-nitrogenous, with its sub-divisions, the carbohydrates, such as sugar and starches, and the hydrocarbons including the oils and fats. It will be necessary for the clear understanding of the proportions these several classes should assume in the dietary of the gouty, to run over briefly the parts they play in the nourishment and maintenance of the body in health. The theory that Liebig promulgated with regard to the nitrogenous foods, viz., that they are solely applied to the repair of the nitrogenous tissues of the human frame, has been shewn to be erroneous; for in addition to this function, under special circumstances they contribute to the formation of fat, and since the albumen of the body, which exists in the fluids permeating all its tissues (and which is known as the circulating albumen, in contradistinction to the organic albumen present in an organised form in the tissues) forms the oxygen carrier of the body, it follows that the albuminates help to regulate the absorption and utilization of oxygen, and consequently play an important part in the chemistry of nutrition. It is with the splitting up of the albuminates into urea, uric acid, and other bodies such as creatine that we shall have to deal when we come to consider the cause of the gouty diathesis. The carbohydrates, which might be termed for convenience the vegetable parts of the diet, are converted into glucose and eventually become, by combustion in the body, carbonic acid and water. Both the carbohydrates and hydrocarbons or fats yield muscular force and heat, and a very important part they play is that of checking the albuminous waste of the body. Although the conclusions that have been arrived at by various investigators are not altogether in unison, it is certain that the ingestion of fats does diminish the absorption of oxygen and therefore lessens metabolic change. This at any rate admits of no doubt, since an animal fed on fat actually absorbs less oxygen than one fed on nothing at all. The carbohydrates are split up so easily that they lessen the metabolism of the fats, and therefore indirectly, by saving the fats, they lessen the destruction of the albuminous bodies. Physiologists do not appear as yet to have come to any undebatable conclusion as to the method by which this takes place; but if, and this is what does happen under suitable circumstances, the ingestion of carbohydrates causes the deposition of fat, either the glucose becomes converted into fat, or else it lessens the destruction of the adipose tissue already present, and in both cases the ultimate result is the same. The importance of the inorganic constituents, the mineral salts and water, requires here only passing mention in the matter of diet, but bearing in mind the special diet we are considering I would draw attention to the obvious necessity of flushing the system with water in any case where more or less soluble substances have to be got rid of.

Whatever theory is accepted as to the cause of gout, it has been placed as a record by Garrod that before and during a paroxysm uric acid is in excess in the blood, and when the paroxysm is over the excess appears in the urine, and is discharged by means of that vehicle. It has been held by some that the excess is due to a surfeit of nitrogenous food, so much being taken that, instead of urea being formed, uric acid is formed, a much less soluble product and one that is eliminated with difficulty, so that the blood, not being able to hold the excess in solution, deposits it as a salt in the tissues. If this, and this only, were the difficulty it could easily be arranged : diminish the amount of nitrogenous food, and the uric acid will not be in excess. But it is known from practical experience that fat taken in excess also tends to increase the uric acid, by interfering with the complete destruction of the albuminates in the body, and as we have just seen, the carbohydrates assist the storing of fats, so that it is evident that simply lessening the amount of nitrogenous food is not sufficient.

There is, however, another aspect to the case. If the blood becomes more acid, or, to speak more correctly, less alkaline, the uric acid is held in solution less readily, so that everything that tends to increase the acidity improves the chance of the deposition of the acid. The sulphur and phosphorus in albuminous food forming sulphuric and phosphoric acid would, if in excess, naturally tend, if not neutralised, to increase the acidity of the fluids, but in addition to this, dyspeptic conditions, even in those whose consumption of the albuminates is not excessive, might do the same. If we consider that this diminished alkalinity of the blood is the cause of gout, while recognising the excess of animal food as a factor in producing a tendency to increased acidity of the blood, we need not accept it as the only factor. There must indeed be another cause existing in some persons, unexplained at present—for to call it constitutional is not to explain it—which, being perhaps inherited, interferes with metabolic processes and gives them gout, uric acid gravel, or calculus, and possibly gallstones, be their diet and mode of life what it may. There seems in such persons a special proclivity to the deposition of the solid constituents dissolved in the fluids of the body, and until something of this kind actually takes place the premonitory symptoms, such as headaches, skin affections, or alterations in the temper and temperament may be completely misunderstood. The term gout seems so firmly wedded to the big toe that unless one of its joints is affected there is a tendency to veil the name under such synonyms as lithæmic condition, uricæmia, or the more venturesome, if somewhat popular expression, suppressed gout, but it is gout all the same.

I dare say some here may remember the little baby boy attending the skin department at the General Hospital with a terribly sore head, weeping more copious and substantial tears than the pain and irritation caused the child himself to shed, and defying all the usual remedies, till finding the urine very acid, and associating the condition with that of a woman, unquestionably suffering from gout, who also had an acute breaking-out on the head, I commenced to treat the baby as I had done the adult, with immediate improvement. It sounds a little startling to hear that a baby, twelve months old, has the gout, and forcibly recalls the precocious infant of Gilbertian fame, who wished with his elderly nurse to wive, and "died an enfeebled old dotard at five;" but if this were not gout, it was something very near it. If this baby escapes the untimely fate of his less fortunate prototype, I may at some future time be able to shew you one of his big toes presenting a genuine attack of gout in the classical situation, and if ever I get the chance I will bring him before this august society. The importance, then, of the dietetic treatment of gout does not arise, for the first time, when the joints are affected, but when the blood begins to lose its alkalinity; at the same time, in fact, when the patient is sure it is not gout, because none of his joints have ever been affected, and the treatment which wards off this untoward occurrence generally doubles both his assurance and his reluctance to follow dietetic rules; I am not correct, however, in saying that the latter is always doubled, it is sometimes trebled.

We have seen that theoretically all the main divisions of food-stuffs appear to produce in certain individuals a tendency to the uric acid increase; and bearing this in mind, our first endeavour is to diminish proportionately the amounts of each taken, and choose the articles of diet in such a way that each should contain less of one of the groups and not enough of any other to increase disproportionately that other. For instance, the nitrogenous group might be very easily diminished by arranging a vegetarian diet, but by doing this the carbohydrates would be increased out of all proportion, and would probably produce more harm than good. We must therefore strike a middle course, and diminishing the animal food, increase the vegetable within certain limits only. Acting on general principles, then, we may for convenience sake pass the headings of a *menu* in review and commence with the soups. These should be light vegetable *purées*, and should neither be thickened with starchy matter nor contain much animal flavouring or extract. Gravy soups and those made with beef essences should be avoided. Of fish, the oily and heavier kinds, such as eels, salmon, and mackerel, should be eschewed; but all the lighter and less firm kinds can be taken freely. *Entrées* and all "made dishes" should be looked upon with suspicion, and should only be taken if free from highly spiced seasonings or sauce. Of meat itself a white meat is preferable to red and brown, but some latitude must be allowed for individual taste; mutton, for instance, in many cases proves more digestible than chicken, and both beef and mutton, if tender and well cooked, are better than tough white meat from whatever source it be taken, and certainly a little brown is better than much white. It is not obligatory to eat the lean only of the meat; fat in moderate quantities is advisable, as it produces a feeling of satiety, and tends to keep down the whole bulk of food taken. Fresh green vegetables and celery may be eaten feeely, and salads if not too oily. The only vegetables that have to be watched are those containing much oxalic acid, as rhubarb and sorrel, and those like lentils and haricot beans, which contain in large amount nitrogenous substances in addition to carbohydrates. For sweets, all very sweet or very acid dishes must be shunned, but ordinary fresh fruit may be taken freely. Cheese should not be partaken of recklessly; and bread, if taken in anything approaching a large amount, had better be toasted.

With regard to the important question of drink, there seems no doubt that this should be encouraged, but only so far as the watery portion of the potations is concerned. If the urine be scanty, uric acid may be deposited because there is not enough water to keep it in solution. I have seen a very striking instance of this within the last few days:—A lady came to consult me, saying that for some months, about nine she thought, she had been suffering from depression and low spirits, feeling so dejected and miserable at times that nothing but a good cry afforded her relief. She also complained, or rather I should say that she said that her husband complained—that for the last six months her temper was short and she was very irritable. I found that during this period the amount of water passed had been below the usual quantity, and the specimen given me deposited crystals of uric acid within six hours of being passed. The whole amount of fluid drunk in the day was curiously small; she said she never felt thirsty. By decreasing the amount of nitrogenous food taken and ordering more fluid, especially between meals to insure rapid absorption, the whole of these symptoms have disappeared, and no uric acid crystals are now thrown down from the urine within forty-eight hours of its being passed.

There are various ways of increasing the amount of fluid taken. It has been fashionable lately to prescribe alkaline table waters to be taken with wines at dinner, and this is not a bad plan, but it has the disadvantage of spoiling the wine, and sometimes it sets up flatulent distension of the stomach. Alcoholic drinks should not be taken at all by gouty people if they can do without them. But in many cases there is no doubt it is better for the patient to take a small quantity of alcohol well diluted, than to take none and also none other fluid, and thus to lose the flushing effect of that other fluid which could have been taken as a means of dilution. And then, as patients say, they must drink something, and as many of these cases cannot take tea on account of the dyspepsia it excites, and to which they are especially prone, and as milk can only be taken with meals habitually by a small majority of people, there is really not much left but hot water. This may sound rather insipid, but it is nothing like so bad as cold, and although few people have the courage to drink it with meals in public, it is a very valuable remedy, and if taken early in the morning and late at night in the seclusion of one's bedroom, and on an empty stomach, it is really rather comforting, and being rapidly absorbed it not only increases the urinary secretion but does good by preventing constipation.

Although in many cases I fear it is made an excuse rather than a reason, still, plain water does not suit everyone, and often lies like a weight on the stomach, causing much distress, so that in discussing drinks we may find it advisable to permit wine in some cases, and accordingly we order the least harmful ones, such as good clarets, hock, moselle, chablis or sauterne, and direct that all strong, spirituous, sweet, and acid wines be avoided. The public moreover know this pretty well already, without much direction from us. It must not be forgotten, however, that some of the wines usually recommended, such as clarets and Hungarian wines, are of a light nature, both in substance and in price, and are often very acid, so that unless neutralized by some alkali, I have never been able to convince myself that if taken in the large amounts (as so frequently happens) that some patients are accustomed to drink them, under the impression that they are harmless, they are really any better than a smaller amount of a better and less acid wine. Strong beers, porters and stout, should be avoided altogether, but the lighter kinds of beers, such as Lagers and similar beers now in the market are free from objection. Porter and stout are particularly noxious on account of some principle formed in the grain-roasting part of the process of brewing, which is considered an important factor in the origin of gout. The lighter kinds of beers are not only not prohibited, but recommended, as they exhibit the means of taking much fluid in an agreeable and unobjectionable form. There has been some difference of opinion as to cider, but it is now taking its place as a useful beverage for the gouty, especially when in the form of a sparkling wine and not too acid. Tea and coffee are both very useful, and since China tea contains less tannin than Indian tea it is to be preferred

Dr. Johnson's dictum "that it is easier to abstain than to be abstemious," is a very true one, and applies to no cases better than to those we are considering. It is the slight change all round that presents the difficulty, any sweeping alteration commends itself to the attention of the patient at once, and is carried out; but a little less here, and a little more there, often means going on in pretty much the same old way. It is, moreover, particularly in the very cases where this dietary is necessary that conflicting influences arise. Let us take an example ready to hand—excess of uric acid is especially met with in fat and flabby people, who cannot take sufficient exercise to cause a complete metabolism of their albuminous food; how would a diet recommended for obesity suit the class of cases where uric acid is in excess? Let us run over a few anti-fat diets and see how they are arranged. First of all, Dancel's depends essentially on limiting the amount of fluid; he had observed that horses developed fat bellies when they were allowed to drink more than the usual amount of water, so he cut down the allowance of fluid taken in twenty-four hours to the smallest possible limit. Besides limiting the fluid, he enjoined abstinence from fat and from farinaceous foods and prescribed plenty of exercise.

A diet like this would, of course, tend to diminish the removal of the uric acid by diminishing the amount of urine excreted, and would, therefore, assist its deposition in the tissues. The famous Banting system certainly did cut down the whole amount of food taken, but the nitrogenuous, even then, was greatly in excess, and the fluid taken was cut down to two pints or less, so that this diet would not be expected to mend matters. Ebstein, on the other hand, although he, too, diminishes the total amount of food taken and forbids carbohydrates, gives the fats greatly in excess. The Oertel-Schweninger régime, brought into such prominence in connection with the German Chancellor, aims not only at reducing the fat the patient carries, but leads to an improved nutrition and strengthening of the cardiac wall, and includes specially arranged gymnastic exercises in addition to the diet. These exercises consist in great measure of walking uphill definite distances every day, and the steep pathways can be seen at the foreign watering-places with numbered placards at intervals indicating that the pedestrian must go so far, and no farther. There seems to be some slight attempt at this in the "ten minutes' walk," at Llandrindod Wells, in Radnorshire, where the springs are admirably adapted for the treatment of the condition we are now considering; but otherwise I have only seen it carried out abroad. The diet of the Oertel-Schweninger system places a limit on all food, but proportionately increases the albuminates, and brings the fluids down to a pint-and-a-half in twenty-four hours, and according to Schweninger, all drink must be taken between meals, two hours after food, he says, but under no circumstances with the meal. Germain Sée has pointed out that the limitation of fluid is a serious drawback to all these methods, and calls attention to the fact that the imbibing of fluid must be useful in any case where there is a tendency to the deposit of uric acid. This is a very pertinent remark, with which I quite concur, and I am in the habit of prescribing plenty of fluid, even if there be some tendency to obesity, since the increase in the urinary flow, resulting from the increase in the fluid taken, helps in great measure to prevent the deposit of uric acid in the urinary passages.

It is important that the all round diminution in the food taken should not be carried to excess, as an attack is sometimes brought on by an unusual drop in the nutritive quality of the food. It is not unusual to have a man with acute gout brought into a hospital and to hear a tale of semi-starvation in taking his history. This is remarked upon by Charcot in the account of gout and rheumatism in his book on senile diseases. He says in reference to the victim of gout—"he should be abstemious in his feeding but must not carry this too far, lest he should favour the development of atonic gout;" and Dr. Tuke, the translator of the volume, relates the following as an example:—"I have lately attended," he says, "a former officer of the Confederate Army, who during the war of secession in the United States was made prisoner by the Northern troops. Shut up in a damp unhealthy prison, and with very insufficient food, he became gouty; he is so still, and yet he had no hereditary antecedents likely to predispose to gout, and till then had never shewn any symptoms of the disease."

The Ebstein diet, for instance, is a very spare one, and would have to be carefully watched. It consists approximately of the following amounts: — Bread = 3 oz., meat = 7 oz., soup = 10 oz., tea = 24 oz. This is the diet for one day, and is taken from "Food in Health and Disease," by Dr. Burney Yeo, to whom I am indebted for much information on the subject of diet, both from the study of his writings and from personal tuition when I worked under him as his house physician some years ago. By comparing this diet with those I have written on the board you will see that it is much less nourishing than the house diet of the General Hospital, even less than the No. 7 or house diet of the City Infirmary, and this is not luxurious by any means. From a nutritive point of view it about equals the No. 3 or half diet of that institution, a diet that is of great value (medically speaking of course) as a corrective, and one, it is interesting to notice, that has been found to suit admirably the inward and spiritual condition that manifests itself in the outward and audible sign of incompatibility with existing authorities, a condition eminently conducive to borborygmi, or, as I may be allowed to translate it, inward grumbling.

It is evident, then, that a diet of this description could only be expected to suit a particular class of patients; and as the large amount of tea it includes is said to be given in order to prevent undue fatigue and exhaustion, a man in the habit of taking a fair amount of exercise would fare badly on it, unless he altered his mode of life and lived quite passively, an impossibility to most men, whose livelihood depends on their own exertions. If the patient is able and willing to take a fair amount of exercise, the question of diet is considerably simplified, and a more liberal quantity of albuminous food may be allowed than when he is obliged to follow a sedentary occupation with little opportunity of burning off his nitrogenous waste.

A very useful method of exercising the muscles in selected cases is the plan introduced, or perhaps I should say revived, by Weir Mitchell. This consists of passive movements, regularly carried out by a trained rubber, and the method has been extensively carried out by Playfair, of King's College Hospital, where I had the opportunity of seeing his massage nurses at work, and of learning the method from them. It not only has the advantage of improving the nutrition of the muscles in cases where exercise cannot easily be taken in other ways, but, in addition, often improves greatly the movements of joints that have become stiff from disuse, and thereby assists the limbs to regain sufficient mobility to be of service to the patient again, and places him in a position to continue the exercise himself, and so prevent the occurrence of adhesions. The patient that I shewed you to-night before the paper illustrates this point very well. For five years she could only walk with difficulty, on account of swelling and pain in the knees, preventing her flexing them through more than 30°. She can now, after systematic massage, extending over some six weeks, walk up and down stairs comfortably, stoop and sit easily, and get into bed without assistance. Now that she can exercise the limbs herself the massage is no longer necessary. In several cases lately under my care at the Infirmary I have succeeded in considerably increasing the movements in joints crippled by chronic rheumatism, gout, and rheumatoid arthritis, by means of systematic massage; and even a little movement in the joints of fingers hitherto stiff and cramped will enable the hand to become a comparatively useful member once more.

There is another class of gouty patients for whom the diet must be specially arranged. This is the class who combine the uric acid diathesis with a tendency to pass sugary urine. It will be seen at once that the excess of animal food often prescribed in cases of glycosuria will increase the tendency to uric acid formation, if such be present. The removal of sugar from the dietary, fortunately, is rather beneficial than otherwise, and is certainly so if there be a tendency to obesity as well, and it is just this class of case that does very often become fat. Of all the alterations in diet, the limitation of sugar, as it occurs without the patient's knowledge of the fact in ordinary articles of diet, is one of the most difficult to carry out, whereas the limitation of sugar, as lump sugar is the one that is received most kindly; it is seldom that any objection is made to the substitution of saccharine for sugar, where it can be carried out without inconvenience, and the fascination exerted over the popular mind by the little tabloids that can be brought out so prettily at afternoon tea, has made the practice rather the "thing to do," and when once that exalted postion has been reached the difficulties in the way of carrying it out vanish at the touch of that magic wand—fashion.

In conclusion, then, although the dietaries that are given as samples of special methods of treatment look satisfactory on paper, it will be seen that an individual diet table must be drawn up for each case to suit the peculiarities of the patient and his surroundings. None of the above dietaries, then, should be used indiscriminately. In spite of all care as to food and drink, one meets occasionally with cases presenting the uric acid diathesis in whom gout from time to time will occur, whatever they may partake of in the way of nourishment. As a parallel, witness the fat people who not only remain fat, but increase in size be their food, drink, and mode of living what it may, and for whom there really seems nothing to propose but six months in gaol with hard labour, and I rather think the regimen would do some of them good; but I should not advise this suggestion being made use of even as a joke, unless you are quite sure the recipient is endowed with a sufficient sense of humour to regard it in that light and no other. An inherent tendency, then, of this kind must be coped with by means of drugs, or in some manner not included in, and therefore beyond the scope of, this paper.

REPORTS OF CASES.

BY CHRISTOPHER MARTIN, M.B., F.R.C.S.
SURGEON TO THE HOSPITAL FOR WOMEN.

1. *Tubo-ovarian Abscess discharging into the rectum.*

A. J., single, æt. 27, was sent by Dr. Bateman, of Middlesbrough, to Mr. Lawson Tait in February, 1892, complaining of pain in the pelvis and back, and of the copious discharge of matter with the stools. In December, 1890, she had the misfortune to become pregnant. Three months later she noticed in the right groin some enlarged tender glands. When six months pregnant there appeared in the right iliac region a deep-seated tender fixed lump. This disappeared after the confinement, and she believed it "broke internally." In September, 1891, she was confined, at the full term, of a living child. Forceps had to be applied. On the fourth day erysipelas of the thighs and back set in, and she became delirious. Four weeks after the confinement she had a severe attack of inflammation of the bowels, and at the same time an abscess burst into the vagina and discharged a large quantity of pus. In December, 1891, she began to have much more pain in the back and lower abdomen. Dr. Bateman examined her, and found a mass behind the uterus and a large quantity of pus in the motions. At the same time her urine became thick and offensive and micturition frequent and painful. She did not suckle the child, but menstruation did not return after the confinement. In January, 1892, she began to have profuse night sweats, and became very emaciated.

Condition on Admission.—The patient was miserably thin and anæmic. Her heart and lungs were normal. There was a marked rise of temperature and pulse in the evening and profuse perspirations during the night. With each movement of the bowels from half an ounce to an ounce of offensive pus escaped from the rectum. There was also a discharge of matter per rectum every morning on getting out of bed, quite apart from the act of defæcation. There was no vaginal discharge. The urine was alkaline, contained a large quantity of mucus and phosphates, but no pus. She complained of constant deep-seated throbbing or aching pain in the pelvis and back, with bearing down and some rectal tenesmus. On vaginal examination the uterus was found pushed forwards against the pubes. Behind and to the right of it was a firm tender fixed mass as large as a baby's head. A similar but smaller mass could be felt high up to the left of the uterus. Per rectum the mass to the right could be felt bulging into the rectum, but no fistulous opening into it could be discovered. On February 4th, 1892, Mr. Lawson Tait opened the abdomen and removed both sets of appendages. The mass on the right side proved to be a huge tubo-ovarian abscess, containing many ounces of fœtid pus, and discharging into the rectum. It was densely adherent, and was removed with much difficulty. The mass to the left side was an ordinary pyosalpinx. The abdomen was washed out, and a large-size open-ended drainage tube inserted so that it covered the hole in the rectum. There was no discharge of fæcal matter through the tube, although flatus escaped for some days. The patient made a slow recovery and returned home on the thirty-sixth day. She has since remained quite well, there being now no discharge per rectum and she is free from pain.

2. *Strangulated Ovarian Tumour; absence of characteristic symptoms. Ovariotomy.*

Mrs. W., æt. 38, was sent to Mr. Tait in the early part of June, 1892, by Dr. Cox, of Winchcombe. She had been married for seven years, but had never been pregnant. Menstruation began at the age of thirteen, was always regular, occurring every four weeks, lasting five days, fairly profuse and somewhat painful—the pain beginning four days before the flow, and lasting during the whole period. For twelve months previous to admission she had increasing pain in the abdomen, worse just before each period, but never violent or paroxysmal in character. Defæcation became difficult, and a free leucorrhœal discharge appeared. Micturition became scanty and painful. She at no time suffered from sickness, but her tongue frequently became furred and her appetite bad. During the last few weeks she noticed that towards evening she became feverish and then broke out into a profuse perspiration. Her abdomen slowly increased in size during the six months previous to admission, but the increase was never sudden and rapid, and, in fact, hardly attracted her attention.

On examination, there was found in the abdomen a globular tumour, the size of a seven months' pregnancy, rising out of the pelvis and reaching to above the umbilicus. In consistence it was firm and elastic, and fluctuated obscurely. It was silent under the stethoscope. No secondary cysts could be felt. It did not exhibit any intermittent contractions. On vaginal examination, the uterus was found to be chronically enlarged, and anteverted. Above and behind the uterus was felt the lower pole of a cystic mass which fixed the pelvic roof.

On June 15th, 1892, Mr. Lawson Tait performed ovariotomy. On opening the abdomen, an ovarian cyst, the size of a seven months' pregnancy, was exposed. It was greenish-black in colour, and almost universally adherent. It had rotated on its vertical axis three entire revolutions, and so had been strangulated. The pedicle was very short, and twisted like an umbilical cord. It was carefully ligatured, and the tumour cut away. The abdomen was then sponged out, a drainage tube inserted, and the wound closed. The tumour was a multilocular ovarian cystoma of the ordinary glandular variety. In consequence of its axial rotation and consequent strangulation, hæmorrhage had taken place in its cavity. The wall of the tumour was also infiltrated with blood to an extreme degree, and wherever cut into was of a deep reddish black colour. The cyst contents were composed of a mixture of old bloodclot and glairy fluid. The patient's convalescence was rapid, and she returned home on the twentieth day. The interesting point in the case was that the characteristic symptoms of strangulation were absent. There was nothing in the patient's history to lead the surgeon to make such a diagnosis. Probably the rotation took place very slowly, and so did not cause acute symptoms.

3. *Cyst of the Liver; Enucleation.*

E. R., single, æt. 21, a domestic servant, was sent to Mr. Lawson Tait by Dr. Haynes, of Evesham, in August, 1891. She complained of a swelling in the right side of the abdomen, which had been steadily growing for six months. Her menstruation was quite normal. It occurred regularly every four weeks, lasted six days, was moderate in quantity, and painless. She was unwell the week before admission. In January, 1891, she caught cold during her period, and soon after, she noticed a lump in her right side bulging out between the lower ribs and the iliac crest. It steadily and rapidly increased in size. She had a dull aching pain in the right abdomen and a sensation of weight and oppression. Three years ago she began to suffer from attacks of pain in the right side of the abdomen. These attacks were at irregular intervals, were frequently very severe, "doubling her up" and causing her to faint. They were frequently followed by vomiting, but never by jaundice or hæmaturia. She never noticed her stools to be paler than usual after these attacks. During the last few weeks before admission she lost flesh and had occasional night sweats. Her appetite was fair. There was no history of urinary disorder. She was inclined to constipation.

Condition on admission.—She was rather thin, but otherwise in good general health. There was no jaundice. On the right side of the abdomen a large prominent swelling bulged out between the ribs and the crest of the ilium. Below, it reached to the level of the anterior superior iliac spine. Anteriorly it extended to the left of the middle line. The cutaneous veins were markedly enlarged over its surface. On palpation it was evidently a large cyst in the substance of the liver. It fluctuated distinctly, and was flaccid rather than tense. In shape it was oval, its long axis being transverse. It was dull all over, was not tender, did not pulsate, and was absolutely silent under the stethoscope. There was dulness in the right flank when the patient was on her back, but resonance when she turned on her left side. Its rounded lower margin sloped obliquely upwards from the right anterior superior spine to the left tenth costal cartilage. The upper limit of the liver-dulness extended to the level of the fifth rib. The urine contained neither albumen nor traces of bile pigment. There were no rigors. Her temperature was normal and her pulse 70. Her heart and lungs were normal. A vaginal examination was not made.

On August 18, 1892, Mr. Lawson Tait opened the abdomen by a lateral vertical incision, its centre being over the most prominent portion of the tumour. As soon as the peritoneum was opened, the distended liver came into view. Mr. Tait incised the liver substance to the depth of about half an inch, when a thin walled cyst came into view. This was tapped, and many pints of thin pale brown turbid fluid escaped. The opening was enlarged, and the cyst wall peeled out of the liver substance by a process of enucleation. The cyst was unilocular. After the cyst wall had been entirely removed a huge raw bleeding cavity was left. The hand, introduced into this cavity, could be passed backwards as far as the ribs and vertebral column, in front of which the aorta could be felt pulsating. To check the hæmorrhage, the cavity was stuffed with sponges. The margins of the incision in the liver were then stitched to the margins of the abdominal incision. The sponges were then removed and a drainage tube inserted. As there was still very free bleeding, a firm abdominal compress was applied in such a way that the walls of the hepatic cavity were pressed against each other. At the same time the lower part of the chest was tightly compressed with elastic bandages.

After the operation, the patient became very weak from the loss of blood, so brandy and beef tea enemata were administered, and champagne given freely by the mouth. Next day the compresses were removed. The patient went on satisfactorily after the first twenty-four hours The glass drainage tube was changed on the sixth day, and replaced on the ninth day by an indiarubber tube. This was finally removed on the thirteenth day. The sutures were removed on the seventh and eighth days. After the removal of the drainage tube, febrile symptoms began to slowly develope. By the nineteenth day her temperature had risen to 104° and her pulse to 130. A rubber drainage tube was therefore re-introduced into the cavity in the liver, and a large quantity of pus evacuated. After this she made an excellent recovery; the cavity in the liver contracted and rapidly became obliterated. The patient was soon able to get about, and went home about a month after the operation. Five weeks ago I heard that she was in perfect health.

4. *Double Ovarian Tumour associated with ruptured Tubal Pregnancy.*

In the middle of June, 1892, Dr. Power, of Atherstone, asked me to see with him, in consultation, a case which he suspected to be one of ectopic gestation. The patient was 28 years of age, and had been married nine years. She had had three children, the last four and a half years previously, but no miscarriages. Menstruation commenced at the age of fifteen. Until February, 1892, it was quite regular, occurring every three and a half weeks, lasting from seven to ten days, profuse and painful—the pain beginning two days before the period, and lasting for about five days. She menstruated as usual in the middle of February, 1892 (seventeen weeks before operation). She saw nothing for five weeks (twelve weeks before). At the end of the fourth week of amenorrhœa (thirteen weeks before) she was suddenly seized with severe cramp, like pains in the back and lower abdomen, lasting for three hours. "They were worse than labour pains, and doubled me up." A week later (twelve weeks before operation) the pains recurred, and profuse flooding set in. She now passed a flattened piece of skin, resembling a piece of tripe in appearance, whitish in colour, and about three inches long. After this came away, the flooding abated somewhat but did not entirely cease, however, as there was a constant dribbling of nearly pure blood, the patient never being a day free. Eleven weeks before operation she had a third attack of paroxysmal pain, and a fortnight later a fourth attack. After this last attack she was confined to bed for seven weeks. During this time she had increasing difficulty in defæcation and micturition, and increasing pain in the back. She then became constantly sick, vomiting everything. At no time were her breasts enlarged or tender. After the first severe flooding she became very weak; but she did not at any time exhibit signs of internal hæmorrhage.

When I saw her at Atherstone she was apparently in good health. The breasts were not enlarged, and contained no milk. On examining the abdomen, there was felt rising out of the pelvis a soft rounded irregular swelling, reaching half-way to the umbilicus. It was elastic, and evidently cystic. It was not tender, and exhibited no intermittent contractions; on auscultation nothing could be heard. Per vaginam the uterus was felt to be enlarged and pushed forward against the pubis by a tense globular cyst, which distended the pouch of Douglas, and bulged downwards into the vagina, and backwards into the hollow of the sacrum. It was not tender, and was easily outlined. No pulsating vessels could be felt over it; no ballottement could be detected. The enlarged hard fundus could be felt bimanually just above the pubis. The cervix was patulous, but not softened. Per rectum, a tense cystic mass could be felt in front.

It will be observed that the history was characteristic of a ruptured ectopic gestation; the physical signs were those of an ovarian cyst.

In favour of the diagnosis of an ectopic gestation were (1) five weeks' amenorrhœa followed by (2) recurrent attacks of paroxysmal pain, (3) metrorrhagia, (4) the passage of a decidua, and (5) the development of an elastic tumour in the pelvis.

In favour of it being an ovarian tumour were (1) the fact that the tumour had all the physical signs of an ovarian cyst, (2) the absence of breast changes and of softening of the cervix, (3) no distinct history pointing to internal hæmorrhage.

Mr. Lawson Tait opened the abdomen on June 22, 1892, and exposed a cystoma growing from the left ovary. This was tapped, emptied, delivered, and removed *secundem artem*. Below it, and forming the tenser swelling felt per vaginam, was a double mass, which proved to be a ruptured ectopic gestation—in the abdominal end of the right Fallopian tube—and a cystoma of the right ovary. The Fallopian pregnancy had evidently ruptured some weeks previously, as shewn by the quantity of old bloodclot free in the peritoneal cavity. This complex swelling was removed with some difficulty. The abdomen was then irrigated with warm water, a drainage tube inserted, and the wound closed. The patient made a speedy recovery, and returned home on the twentieth day.

The specimens removed consist of (1) the left ovary and tube, the ovary being the seat of a cystoma as large as a cocoa nut, the tube being healthy. (2) An ectopic pregnancy in the right tube near the abdominal end, ruptured. Distinct placental tissue infiltrated with blood. No trace of a fœtus. (3) A cystoma of the right ovary as large as a baby's head.

The tubal pregnancy was thus sandwiched between two cysts.

5. *Double Ovarian Tumour.*

Mrs. E. K. was sent to Mr. Lawson Tait in June, 1892, by Dr. Ashford, of Winson Green. She was forty-eight years of age and had been married twenty-one years. She had had five children, the last being born four and a half years ago. All her labours had been easy; she had had no miscarriages. Her menses began at the age of thirteen and were usually quite regular, occurring every four weeks, lasting seven days, fairly profuse, and quite painless. Three months ago she noticed that her abdomen was swollen, and it has since steadily increased in size. At the same time her periods became extremely profuse and very painful, the pain commencing three days before the flow and lasting the whole period. Her last period occurred about three weeks before admission. She had much backache and pain shooting down the left thigh. She had lost flesh during the last two months. Beyond the loss of flesh and obstinate constipation, the patient's general health remained good.

On examining the abdomen, it was seen to be distended by a polycystic tumour rising out of the pelvis to above the umbilicus. The superficial abdominal veins were enlarged and tortuous. The cysts varied much in size and consistency, some being small and tense, and others large, lax, and ill-defined. Fluctuation was evident. The tumour was dull, whilst there was resonance in the epigastrium and flanks. The abdominal wall moved freely over the mass, and the latter enjoyed considerable lateral mobility. It was quite silent under the stethoscope. On vaginal examination, the uterus was found to be enlarged and pushed forwards against the pubis by a firm rounded fixed mass behind it. This latter swelling did not move with the abdominal tumour or with the uterus. On the other hand, the uterus moved very distinctly with the abdominal mass. The pelvic mass was about the size of a small cocoa nut, was quite fixed in the pelvis, and felt absolutely solid. On rectal examination, it was found to have pushed the rectum over to the left side of the pelvis.

On June 30th Mr. Lawson Tait opened the abdomen and removed a large multilocular ovarian cyst with the usual glairy contents. This was growing from the left ovary. There was a good pedicle, which was secured with the Stafford knot. The mass behind the uterus was then attacked. A trocar was plunged into it, but no fluid escaped. It was then levered up into the wound on the point of the trocar like a huge potato on a fork. The tumour was delivered through the wound and found to be a solid dermoid tumour of the right ovary. Its pedicle was ligatured in the usual way, and the tumour removed. The peritoneum was carefully irrigated, a glass drainage tube inserted, and the wound closed. The dermoid tumour was found to be filled with a solid mass of tallowy fat mixed with balls of flaxen hair. One or two teeth were growing from a cartilaginous plate in the cyst wall. There were no adhesions to either tumour

The patient made an uninterrupted recovery, and returned home on the seventeenth day.

PERISCOPE.

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CEREBRAL AND SPINAL SURGERY.

BY GILBERT BARLING, B.S., F.R.C.S.

In the *Therapeutic Gazette* for October, 1891, there is a very full and able communication by J. William White, M.D., on the Surgery of the Spine. He subdivides the subject into four groups—(1) Congenital deformities; (2) Tuberculosis of the spine; (3) Neoplasms; (4) Traumatisms.

Under the first heading only one condition is regarded as worthy of consideration, viz., Spina Bifida. After a review of the subject Dr. White is of opinion that the conclusion arrived at by the Clinical Society is a sound one, that these cases are best treated by the method of injection of the sac, as this offers the best prospect of ultimate recovery with the least immediate danger.

Class 2.—Tuberculosis of the spine. Here the indications for operative interference may be (*a*) the evacuation of pus. (*b*) The removal of a sequestrum or of the focus of carious bone. (*c*) The relief of the cord from pressure by pus, bone, or most commonly by the products of a simple or tuberculous external pachymeningitis.

The results of operation for what has been called "posterior vertebral disease," that is, cases in which the transverse processes or laminæ are involved, have been very good, but unfortunately posterior vertebral disease is very rare. With regard to the removal of the focus of disease when the bodies of the vertebræ are involved, there is sufficient experience to shew that in the lumbar region of the spine this is feasible and often very beneficial. Dr. White's conclusions are as follows:—The search for the focus of bony disease in caries of the spine is indicated with sufficient frequency to give the matter a real surgical interest. The posterior arch is accessible at all levels. The seat of disease may be sought in exceptional cases even before the appearance of an abscess, and in the presence of an abscess may be reached with great ease and certainty. The bodies of the lumbar vertebræ are accessible by Treves' operation, even when no abscess which is clinically appreciable is present. If an abscess exists, even when it points anteriorly, it is proper to open it by the lumbar route and seek the focus of disease. If it points in the loin, it should of course be opened in that region. The lumbar incision permits us, if the abscess depends on vertebral disease, to reach, without wounding the pleura, the twelfth dorsal vertebra, and even occasionally to go above it. The eleventh dorsal is usually not to be reached with safety, and unless extensive caries of the ribs has taken place, the bodies of the other dorsal vertebræ are not to be approached surgically even in the presence of an abscess.

After pointing out that the paralysis in Pott's disease is due either to the pressure of an abscess or to a pachymeningitis externa which, while compressing, does not set up an inflammatory process in the cord itself, we have an analysis of forty cases operated on for paralysis. Of these, twenty-two were either improved or absolutely cured, and twelve died; a mortality of thirty per cent. It is evident that children and adolescents are more suitable subjects for this operation than adults, the results in the former being much better; but it must of course be borne in mind, that in children the disease itself is much less grave and threatening than in older patients. The seat and extent of the osseous lesion are important, the prognosis being unfavourable in direct proportion to the height of the caries; above all, when respiratory complications exist previous to the operation. Amongst the conclusions which Dr. White comes to are the following:—In cases in which the ordinary routine methods of treatment have failed, and in which the disease is steadily progressing to an unfavourable termination; when with more or less complete loss of motion and sensation below the level of the lesion, there are incontinence of the urine and fæces, and the development of bed-sores, and especially when acute symptoms threaten life, resection becomes entirely justifiable.

Class 3.—Neoplasms. A brief review is given of several operations undertaken for the removal of tumours involving the cord. Horsley's case of Fibro-myxoma ended in complete recovery and the restoration of the patient to his ordinary duties in life. Dr. White's own case, which appears to have been due to an inflammatory thickening of uncertain nature, also ended in recovery and complete restoration of the patient to health. Rehan also operated with complete success for a Lymphangeioma which was extra-dural and compressed the cauda equina. Pescarole also operated successfully for a sub-dural tumour. Eight other cases are mentioned, in which nearly all the patients died as the result of the operation, the patients who survived obtaining but little relief to symptoms.

In summing up the indications for operation in these cases, the difficulties of diagnosis are recognised, and the following outline of the diagnostic points calling for operation is given. "In the first place, it will be requisite to determine whether the symptoms are due to pressure on the cord or to the inflammatory or other changes, involving primarily the structure of the cord. If, in a case of paraplegia, we have the history of a very gradual onset, beginning with pain and followed first by motor paralysis and then by sensory paralysis; the symptoms being irregularly unilateral; the pain having first seemed to be neuralgic or rheumatic, and burning or shooting in character; if the pain and anæsthesia in the lower limbs ascend gradually from the soles of the feet towards the trunk, and if at the same time there is a constant dull ache in a distinct segment of the spinal column, accompanied by a feeling of weakness at that point, much heightened by fatigue, we have a group of symptoms pointing strongly in the direction of a neoplasm. In addition, it would be found that at first the reflexes, both deep and superficial, were much exaggerated, becoming gradually lost, as destruction of the cord, with descending degeneration and wasting grew more marked, the abolition of the reflexes beginning, as in the case of pain and anæsthesia, in the plantar region and passing gradually upwards. Later in the disease we have the development of spasms with clonus, most marked in the intra-dural cases. The same remark is true of the symptom of rigidity. Local nutrition is not usually impaired. Tenderness of the spine, when it occurs in the dorsal region, appears to be lower than the tumour producing it; in the cervical region, according to Horsley, this generalisation does not seem to hold so closely. The feeling of stiffness and weakness will usually be found to correspond to the position of the tumour. Lateral curvature of the spine is a secondary result of the tonic spasm of the spinal muscles and therefore, the concavity of the bend is on the same side as the growth. The pupils are not affected except when the cord is pressed upon above the level of the second dorsal nerve."

After giving the main features in the conditions likely to be confounded with tumour compressing the cord, Dr. White points out that in differentiating between intra- and extra-medullary formations the best guide will be found in the fact that the symptoms of intra-medullary growths are chiefly those of motor and sensory impairment, while the extra-medullary growths produce much more markedly irritative symptoms, as for example, pain, spasms, etc. The difficulties of diagnosis, and especially of exact localisation, are so great that surgeons are advised always to seek the assistance of a neurologist before operating.

Class 4.—Traumatisms of the spine. An extensive review of the treatment of these injuries is given from the earliest times up to date, abstracts of opinions being quoted, which mark the fluctuations occurring from time to time in the minds of surgeons.

From a study of 80 operations performed for the relief of these injuries we find that the mortality was 58 per cent., but in fairness to the operation, it should be stated that many of these cases were operated on before wound treatment was as good as it is in the present day, and the mortality is doubtless much higher than it would be in cases operated on now. In those who survived, a varying degree of success was obtained, in some few, very complete recovery, but in the majority, the condition was only moderately improved, and in many not at all.

Dr. White considers that the two great questions which present themselves to the operator in the presence of a fracture of the spine are, 1st, Is the cord now compressed by a fragment of bone; 2nd, Has the cord been completely destroyed, partially destroyed, or simply contused. In regard to the first question, we should examine carefully the injured region, which will sometimes, but by no means always, lead to a correct conclusion. As to the second question, the complete disappearance of both sensation and motion below the lesion, would indicate the complete transverse destruction of the cord. The disappearance of either one or the other alone, especially when localised on one side or at certain points, indicates a partial destruction. Unfortunately, such localised or partial paralyses after fracture are extremely rare.

As to the time between the accident and operation, we know that the degenerative changes which are set up after a violent contusion or laceration of the cord, take place with such rapidity that, if much time has elapsed, a large proportion of cases become hopeless, whilst of slowly produced pressure this is certainly not true. As to the region involved, the lower dorsal and lumbar vertebræ are those which can be operated on with the greatest hope of success. But the results are especially satisfactory in operations below the level of the cord.

Dr. White recommends the following method of operating: the patient having been placed in the prone position, and a gentle curve having been given the spine by means of a firm, small pillow placed under the lower ribs, a long incision should be made directly down to the tips of the spinous processes, the middle of the incision being opposite the supposed site of the lesion. The muscles should then be freely separated from the sides of the spinous processes and the posterior surfaces of the laminæ, the edge of a stout thick backed scalpel being used for this purpose. One side of the spine should be cleared, and all hæmorrhage arrested by the use of hæmostatic forceps, before the other is approached, and the wound should be filled with sponges or a towel rung out of a hot antiseptic solution. This having been done, the other side may be treated in the same manner. By the time the spine is thoroughly exposed on the second side, most of the bleeding will have permanently stopped on the other; but any distinct spurts or free oozing following the removal of the catch forceps should then be permanently arrested by ligature, after which the periosteum may be reflected by making a firm incision through it along the angle between the spinous processes and the laminæ, turning up its edge at this point with the help of dissecting forceps, and then scraping the surfaces of the vertebral arches with a curved periosteal elevator. This being completed, the hæmorrhage should be similarly arrested, and the periosteum reflected on the opposite side. The muscles on each side may be kept out of the way by retractors of moderate size. It greatly facilitates the subsequent steps of the operation, if the spinous processes be divided close to their bases, by means of strong bone forceps set at right angle. It is recommended that the laminæ should be divided with a pair of powerful bone forceps either straight or with a large obtuse angle. The vertebra at the centre of the incision should be first attacked, the spaces above and below its lamina being first recognised with the tip of the finger. The point of the bone forceps should then be placed above and below its edges and the laminæ cut through by short nips, keeping as close as possible to the transverse processes, this giving the greatest exposure of the cord. The dura mater being arrived at its colour should be noted, and if there is anything to suggest the presence of blood or inflammatory material in it, or if the exploration should be for tumour which has not been found, the dura should be opened carefully to allow of a more complete examination. When the offending body has been removed, or if one be not found, the incision in the dura should be carefully sutured. The wound should then be closed by deep and superficial sutures, and drained.

The following are the conclusions finally offered :—

(1) Some objections urged against operative interference in spinal traumatisms, *i. e.*, hæmorrhage, frequency of absolute destruction of the cord, pressure from inaccessible fragments of

bone, etc., have been shewn to be unsupported by clinical facts; others were largely due to a well-founded dread of (*a*) the shock in those cases operated on in pre-anæsthetic times, and (*b*) consecutive inflammation, suppuration, and pyæmia in pre-antiseptic periods.

(2) The results of recent operative interference in properly selected cases of fractures of the spine are encouraging, and should lead to the more frequent employment of resection of the posterior arches and laminæ (*a*) in all cases in which depression of those portions, either from fracture or from dislocation, is obvious; (*b*) in all cases in which there is compression of the cauda equina from any cause, whether from anterior or posterior fracture, or from cicatricial tissue; (*c*) in the presence of characteristic symptoms of spinal hæmorrhage, intra- or extra-medullary.

(3) Operation is contra-indicated by a history of such severe crushing force as would be likely to cause disorganisation of the cord. The question which will remain in doubt previous to operation will usually be that of the extent of damage done to the cord and the possibility of its taking on reparative action. As to this, the safest rule is that which has been formulated by Lauenstein, namely, that if after the lapse of six or ten weeks there is incontinence of urine with cystitis, or incontinence of fæces, and especially if there are also the development and spreading of bed sores, but little is to be hoped for from the unaided efforts of nature. If, however, these symptoms be absent, and if there be the least improvement in either sensation or motion, it will be proper for the surgeon to delay operative interference still longer.

Clinical Contributions to Brain Surgery, by John Roberts, M.D. Reprinted from the transactions of the Philadelphia County Medical Society. The first few paragraphs of this paper are worth producing intact, as representing, not unfairly, the craze which exists in the present day for operating in cases which sounder judgment on the part of the operator would leave untouched. Dr. Roberts says, " In 1885 I took strong ground in favour of more active surgical interference in injuries and diseases of the cranium and brain. At that time the views advocated by me were looked upon as being too radical, and were quite vigorously opposed by many prominent surgeons of this country. Since that date there has been developed an unprecedented activity in the operative treatment of cranial and intracranial lesions, which, even in my opinion, has been too extreme. It is, perhaps, not difficult to understand this unscientific and unreasonable adoption of what might be called a surgical fashion. It is to be regretted that the enthusiasm created by success impels some men to interfere surgically in nearly all cases that come into their hands, without a judicious study of each particular patient. It is just as much a part of scientific surgery to abstain from operating unnecessarily, as it is to combat vigorously the unreasonable conservatism of those who will not see the force of anatomical, surgical, and statistical evidence. Fortunately for the patients a healthy reaction is at last taking place, and surgeons are not now removing brain centres and tunnelling the brain in search of abscesses and tumours in quite as enthusiastic a manner as they were a couple of years ago. That such lesions should be promptly attacked surgically is unquestioned, but this should be done only after a thorough survey of the conditions and a judicial estimate of the gain that will possibly arise. The experimental character of many operations upon the brain in recent years has been almost as patent as in vivisectal operations done with an avowed experimental purpose. Death on the operating table and unsuccessful operations have at length begun to stay the hands of these over-enthusiastic surgeons; and there is now ground for hope that cerebral surgery will ere long become less reckless!

"My personal opinions are very much what they were in 1885; indeed the advance in diagnosis and the improvements in operative method have made me even more sure of the correctness of the conclusions then advanced. I cannot, however, bring myself to approve of the reckless way in which human life is often threatened by operations, which hold out scarcely a ray of hope to the helpless patient. The rapidity of healing in aseptic wounds, and the tolerance of the brain under operative attack do not justify hasty resort to intra-cranial surgery because the patient or his family are submissive under the persuasive eloquence of the would be operator."

Case I.—*Trephining for Cortical Epilepsy apparently the result of traumatism; improvement, followed by death in five weeks.*—A child twenty-nine months old had sixteen months previously received a fall, and on the second day after the accident was seized with convulsions. Four months before he had been struck on the head by a falling clock, but no special symptoms followed this mishap. Since the second attack he had had spasmodic seizures occurring at frequent intervals nearly every day. He dragged the left leg a little, did not seem bright, and was still unable to talk. There was a slight tendency to draw up the mouth on the left side, and an inclination to turn the head and body to the left. When his attention was directed to bright objects he would apparently try to look at them, but his eyes usually turned to the left. His hearing seemed to be dull, but so far as could be determined the cutaneous sensibility was unimpaired. No changes were found with the ophthalmoscope. The spasms began with a lifting movement of the whole body; about the same time the eyes and head turned to the left. The left arm and leg were spastic in slight flexion, and were lifted up and projected forward and outward. The limbs on the right side were flaccid but were projected forward and upward, with the jerking movements apparently communicated from the trunk and left limbs.

It was thought that the symptoms pointed to a lesion of the area for conjugate deviation of the eyes and head and certain associated movements of the trunk, thigh, and arm. It was therefore determined to trephine over the posterior portions of the first and second frontal convolutions. Two trephine openings of an inch and a quarter diameter were removed an inch and a quarter in front of the fissure of Rolando and a little to the right of the middle line. The only abnormal things found were some œdema of the pia mater and a thin yellowish white membrane lying upon the pia-arachnoid. Small electrodes applied to the convolutions failed to induce contractions of the left arm. After dividing the pia the convolutions appeared to be healthy. A catgut drain was introduced superficial to the dura mater and the discs of bone were replaced. The wound healed well except at two points, and for nineteen days, whilst the child was under observation, it only had three epileptiform seizures, but two weeks later it died, and from indefinite information it seems likely that death was due to suppuration under the scalp. [Nineteen days after an operation of this kind appears to us to be far too soon to allow the patient to leave hospital. G. B.]

Case 2.—*Traumatic Epilepsy from old fracture; Trephining with discovery of an irregular projection of bone on the interior of the cranium.*—The patient, a male, aged 34, eight years before sustained a severe injury to his head which did not receive medical treatment, but was poulticed by the patient himself and healed up finally at the end of five months, but no portions of bone came away. At the time of examination a scar just above the zygoma on the left side marked this injury. There was a depression here a half-inch in front of the auricle which admitted the tip of the little finger. The patient said that he could not remember so well as formerly. He had for two and a half years suffered from epileptic fits; these were severe at intervals of six weeks, slighter attacks occurring in between. For years there had been severe headache, and just before the commencement of the fit there was a jerking sensation on the right side of the nose. The trephine was applied over the depression, and on removing the internal table a teat-like elevation of bone was found projecting from it and compressing the dura mater; this elevation was raised about a quarter of an inch above the surrounding bone. The dura mater was not opened. Healing took place by first intention, and the patient had no fit in the short time, some weeks, which the report covers.

Case 3.—*Trephining for Traumatic Epilepsy; death from* aseptic *cerebral inflammation.*—A man, aged 28, had suffered a compound fracture of the skull for which some bone was removed at the time. The left arm was paralysed for a time, and eight months after the injury, epileptic seizures began and continued at irregular intervals, sometimes occurring as often as twice in a day, at others as seldom as once in three or four months. A large depression existed on the right side of the skull, an inch and three quarters to the right of the middle line, just behind the fissure of Rolando and extending back over the superior parietal convolution. The left hand appeared to be weaker than the right, and the patient said that it felt differently. After exposure of the skull, the bottom of the depression was found filled with fibrous tissue, which was dissected away and the thickened edge of the bone was removed with the trephine and forceps. Normal brain tissue was exposed, and both from this and from the periosteum there was profuse hæmorrhage, which was only finally controlled by leaving catch forceps on the vessels and closing the wound, the patient being much depressed by the loss of blood. The next day there was great restlessness with hebetude. On the second day, in addition, there was elevation of temperature to 101, and the restlessness passed into violence. On the fourth day, collection of pus inside the cranium being feared, the wound was opened up and the brain explored, but nothing was found to explain the patient's ill-doing and the wound was closed. Death took place the next day. [The term used, aseptic cerebral inflammation, is hardly satisfactory. The inflammation was probably a spreading and infective one. At all events, in the absence of a *post-mortem* examination, and of all measures to shew by cultivation that the wound was really aseptic, it would have been better not to have used the term. G. B.]

Case 4.—An infant received a fall which caused a simple depressed fracture of its skull. There were no symptoms of compression, and it was thought in a couple of days that the depression was less marked. The patient was, nevertheless, trephined from dread of traumatic epilepsy developing. The little patient of course made a good recovery.

The remaining two cases were not operated on. One of these was a tumour of innocent nature on the right side, behind the fissure of Rolando, and between the surface of the brain and the dura mater. It could have easily been removed, but the localisation was not made out, indeed the symptoms were misleading at the time the patient came under Dr. Roberts' observation, as there was paralysis of the arm and leg on the side of the lesion.

REPORTS OF SOCIETIES.

BRITISH MEDICAL ASSOCIATION.

BIRMINGHAM AND MIDLAND COUNTIES BRANCH.

The First Meeting of the Session was held in the Library of the Medical Institute, on Thursday, October 13th, 1892.

Dr. W. F. WADE presided in the absence of Dr. JOY, the President of the Branch.

The following resolution was passed. Resolved—"That the hearty congratulations of this Branch be and are hereby tendered to Sir Walter Foster, M.D., M.P., Secretary to the Local Government Board, upon his promotion to Ministerial Office, so honourable alike to himself and the profession he worthily represents."

Mr. Vincent Jackson shewed a specimen of "loose body" successfully removed from the knee-joint of a young man. The specimen consisted of a piece of articular cartilage and the adjacent bone which had been detached by an accident some weeks before the removal.

Mr. Barling shewed a young woman upon whom he had operated successfully for perforation of Gastric Ulcer. The patient is the third case referred to in the abstract.

Mr. Barling also shewed a man, aged 50, upon whom he had performed Thyrotomy for Papilloma of the Larynx, the patient recovering with a useful voice.

In Nov., 1890, the voice became persistently husky, and six months later the patient experienced a sudden attack of dyspnœa, and since that time he had suffered from difficulty in breathing.

On May 21st, 1892, Mr. Lucas performed tracheotomy at the General Hospital, as the patient was suffering from an urgent attack of dyspnœa. At this time it was recognised that the symptoms were due to a tumour in the larynx.

On June 17th, the patient was transferred from a medical ward to Mr. Barling's care. At that time the whole larynx was blocked by a growth with a papillary surface, it was pink to red in colour, but presented no evidence of breaking down. The exact site of attachment of the growth could not be made out, but it appeared to grow principally from the left side, about the region of the Ventricular band. The patient could only whisper, and when his tube was closed no air practically passed through the larynx. There being a doubtful syphilitic history, general and local treatment were adopted, but they had no influence on the growth. A fragment of this was removed with Schrotter's guillotine for microscopic purposes, and though a suspicious body, looking like a cell-nest, was seen, it did not seem conclusive of epithelioma. (This was probably a transverse section of a horny papillary process).

Operation, July 5th, 1892.—The tracheotomy wound was enlarged and with much difficulty a Hahn's tube was introduced, the difficulty being due to the fibrosis around the wound. The ossified thyroid cartilage was then split down the middle with light bone forceps and the larynx opened. The growth, which was found to fill the larynx, grew mainly from the left cord and immediately below it, but in front it had crossed the middle line and was attached to the right ventricular band. The growth was removed with scissors, leaving the mucous membrane for the most part intact, though the points of attachment of the growth had to be touched with the cautery, as oozing was most persistent from them, and some small sessile warty patches were also destroyed in the same way.

The thyroid alæ were accurately secured by a permanent stout silver suture passed through each side, the soft structures were approximated by buried catgut sutures, and the skin over all.

Hahn's tube was left in until the next day, and then replaced by an ordinary tube for twenty-four hours, and after that the tube was left out altogether. For the first two days all feeding was by the rectum. The only untoward symptom was a quick pulse, which did not subside until three weeks after the operation..

At the present time, October, 1892, the larynx is quite free from growth Both cords are still quite red and the mucous membrane of the planes of the Larynx are thickened and reddened. The voice though hoarse is quite audible, and the patient is comfortable in his breathing by night as well as by day.

Mr. Haslam shewed a patient, aged 46, whose penis he had completely removed for malignant growth fourteen months ago. The patient was able to pass water in a good stream through the perineal opening, and there were no signs of any recurrence of the disease.

Mr. Barling read a paper on The Treatment of Perforated Gastric Ulcer.—Abstract:—

Details were given of the following cases.

1. Latent gastric ulcer, perforation, laparotomy and drainage—six hours afterwards, intense peritonitis, death.

2. Gastric ulcer, perforation, mild symptoms at first, then more acute ones, laparotomy and suture of the perforation on the fourth day, death.

3. History of gastric ulcer, symptoms of perforation, subsidence of these under treatment until the twentieth day, then recrudescence, laparotomy, and drainage, recovery.

The main features of these three cases were pointed out and certain conclusions from them. At least three conditions may be produced by perforation. (1) A very acute, wide-spread, rapidly-fatal peritonitis. (2) A circumscribed peritonitis which may eventually become diffused, that is in the course of a day or two. (3) A circumscribed peritonitis, often mild in its commencement, which eventually suppurates and gives rise either to an acute and fatal peritonitis, or perforates into an adjacent cavity, as the thorax or colon.

Treatment may be, simple incision and drainage of an inflammatory collection; or laparotomy with irrigation and drainage; or in addition the perforation may be closed by suture when this can be done.

MIDLAND MEDICAL SOCIETY.

Wednesday, October 19th, 1892.

Mr. HASLAM, F.R.C.S., in the Chair.

Loss of Urinary and Rectal Control.—Dr. G. H. Melson shewed a patient suffering from partial loss of urinary and rectal control, with increase of patellar and plantar reflexes; most marked on the right side where ankle clonus was also well developed. With this was paresis of the lower extremities leading to an equine character of gait, and the patient also exhibited the signs of general incoördination. There was a well-marked history of syphilis ten years previously, and the present condition dated back altogether for eight years, many of the earlier sensory disturbances having cleared up almost completely. The case was regarded as one of syphilitic degeneration chiefly affecting the right half of the spinal cord in the lower dorsal and lumbar regions. The patient had somewhat improved under specific treatment.

Sebaceous Horn.—Mr. Haslam shewed a large sebaceous horn that he had removed from the scalp of a woman aged 56. It had been growing for six years, and measured along its curves 8¼ inches, the greatest circumference was 2⅛ inches, and the weight 430 grains.

Dr. Malins shewed:—1. A Fibroid Tumour occupying the body of the uterus removed by hysterectomy, on Sept. 20th. The patient, aged 48, had thirteen children and three miscarriages. She had almost constant metrorrhagia for two years, with occasional severe floodings, and abdominal pain. The broad ligaments were tied separately; the cervix transfixed with stout knitting pins and clamped, the peritoneal edges of the wound being carefully brought into contact with it. The clamp came away on the 20th day; the patient had no bad symptoms and made a good recovery.

2. The Right Ovary and Fallopian Tube from a case of abdominal section. The patient, aged 33, was operated on at the General Hospital, on Oct. 4th. She previously had the opposite ovary and tube removed for chronic inflammation in March, 1891. She improved for a time, then had severe pain in the left side and impairment of health. There was a cyst one inch diameter at the Fallopian end of the ovary, another similar one at the uterine end, the structure between was cirrhosed, dense, and white in colour. Menstruation had been regular with much pain. There had been no elevation of temperature or pulse since the operation, and the pain had quite disappeared.

3. A Unilocular Cyst of the Left Ovary. Patient, aged 41, married, three children, youngest 13 years. Abdomen enlarging for twelve months, no pain; menstruation regular; general health impaired. The fluid measured twenty pints. There was nothing to note after the operation. The patient returning to the South three weeks afterwards. A similar case removed the day before was also shewn.

Large Aural Polypus.—Mr. Heaton shewed an aural polypus which he had removed by means of the galvano-cautery from a patient aged 60, in whom it had been growing for 18 years. The interest of the polypus lay in its size. When removed it was larger than a Tangerene orange. Microscopically it consisted of granulation tissue undergoing cicatrisation in its interior.

Paper.—Dr. Foxwell then read a paper on "The Climatic Treatment of Pulmonary Phthisis."

REVIEWS.

POST GRADUATE LECTURES ON THE MEDICAL PATHOLOGY OF TUBERCULOSIS.*

ARRESTED PULMONARY TUBERCULOSIS.†

FOUR HUNDRED CASES OF PHTHISIS.‡

THESE three publications shew that however well-worn the subject of tubercle may be it is of perennial interest by its frequency, its fatality, its multiformity, and its wide-spread distribution. Dr. Crooke's excellent lectures are probably well known to most of our readers, as they were not only delivered in this city but were published in these pages. Commencing by a brief historical account of his subject Dr. Crooke in his first lecture deals with the microscopical appearances of miliary tubercle. In the second lecture he relates cases to illustrate the various forms under which tuberculosis of the lungs may present itself. The third lecture deals with the tubercle bacillus, or tuberculosis considered as an infectious disease. The fourth lecture describes the mode in which tubercle attacks the lungs, the various diseases with which it is associated, the morbid anatomy and histology of tubercular lungs, the modes of extension of the disease, and the state of the heart in phthisis. It is to be regretted that the author has not taken the trouble to supply an index or even a table of contents.

The substance of Dr. Fowler's book formed the subject of a paper read in the section of pathology at the Bournemouth meeting of the British Medical Association. He commences by attacking the use of the word phthisis, which he regards as obsolete, and suggests the substitution of tuberculosis of the lungs, of which he recognises four varieties : 1, pulmonary tuberculosis ; 2, miliary tuberculosis ; 3, caseous tuberculosis ; 4, fibroid tuberculosis. The first of these is meant to designate the class of "chronic phthisis" in which various tubercular lesions are present, but no single one in such a marked degree as to impress a special character on the case. But the main bulk of the book is taken with short notes of a large number of examples of arrested tuberculosis of the lungs, met with in the *post mortem* room. The large number of these cases is explained by suggesting that most of them have never been clinically cases of "phthisis." He points out that the presence of tubercle bacilli in the sputa shews that the lesion is not encapsuled and therefore safe for the present, but he deprecates making this a ground for alarming the patient, as he has seen cases which continue in very fair health in spite of this symptom of an open lesion, which may be quite stationary.

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* Post Graduate Lectures on the Medical Pathology of Tuberculosis. Delivered at Queen's College, Birmingham, Winter Session, 1891. By George F. Crooke, M.D. London: Baillière, Tindall, and Cox. 1891.

† Arrested Pulmonary Tuberculosis. By James Kingston Fowler, M.A., M.D. Cantab., F.R.C.P. London: J. and A. Churchill. 1892.

‡ Four Hundred Cases of Phthisis. By F. M. Sandwith, M.D. London: Adlard and Son. 1892.

Dr. Sandwith's paper is based on his experience of phthisis in Egypt, to which country an annually increasing number of *poitrinaires* is being sent. His experience is very favourable to the beneficial effects of the climate on early cases, but he joins in the appeal made by all physicians practising at health resorts, to the profession here to oppose with all the weight of their influence the expatriation of advanced cases, though no opinion will prevent invalids from indulging in what they believe offers them even a faint chance of prolonging their lives. The frequency of phthisis and tubercular diseases generally among the natives in Egypt proves that the climate in no way hinders the growth and development of the specific infection, and the benefit that our patients can expect to receive from a winter spent there must depend rather on freedom from the unfavourable climatic influences of home than on any positive good from the air of the desert. The majority reach Cairo in the middle of November, spend two or more months from the middle of December at Luxor in Upper Egypt, and then stay till the middle of April in Cairo, at Helouan or at the Pyramids. In April people often go to Ramleh near Alexandria, or more often to the Riviera, not reaching England till the middle of May.

BOOK ON THE PHYSICIAN HIMSELF, AND THINGS THAT CONCERN HIS REPUTATION & SUCCESS.*

This book has reached its tenth edition in America, but we believe this is the first time it has been published in this country. Its success over there speaks for its popularity, but whether it will be as acceptable to the profession here remains to be seen. The author appears to be a good man and a shrewd adviser, but his education, training, and experience of life have been in many respects different from ours, so that while much that he says is true, a great deal of the remainder is more calculated to amuse by the funny picture it reveals of the conditions of medical practice in America, than to serve any more useful purpose. The literary style of the book is easy, but not always grammatical, while the text is larded by words in inverted commas, which look like quotations from the common place book of the reverend gentleman in "Miss Decima." For example, "the physician must, like the diplomatist, tread softly;" this appears to us to be a confusion of the actual and the figurative, but as it refers to the practice of procuring criminal abortion, it may have a better meaning than is clear to us. The following elegant couplet stands at the head of chapter ii :—

> "He who does the best his circumstance allows
> Does well, acts nobly, angels could do no more."

It is put in inverted commas, so is presumably a quotation, though we confess we are not acquainted with its source. Others are familiar enough, such as "Hit him again! he has no friends," though that is not exactly a classical quotation; others, more literary in their origin, are not always correctly quoted; for instance, the gentleman who is "ignorantly read" is said to have "loads of learned timber in his head;" a rather interesting perversion of the text, as across the Atlantic "lumber" means timber, though here it means rubbish. But while there is much in this book that is vulgar in style and commonplace in thought, we have met with no advice that is not sensible and honourable, and although the author seems to our ideas rather rough and uncultivated, he shews himself to be an honest fellow, whose sayings may amuse and instruct young practitioners in many little difficulties of conduct, and we must admit that no man, however well educated and well-bred, can improve on the principle he lays down as the basis of right conduct, viz., doing unto others, as we would they should do unto us.

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* Book on the Physician himself, and things that concern his reputation and success. By D. W. Cathell, M.D. Baltimore Md. Tenth edition. Philadelphia and London: The F. A. Davis Co. 1892.

PUBERTY AND THE CHANGE OF LIFE.*

In this pamphlet of 50 pages, Dr. Webster attempts to explain in language suited to the lay mind the changes which occur at these epochs in the life of women, and the precautions to be observed in passing through them.

We somewhat doubt the wisdom of books of this description, and Dr. Webster, on page 50, foresees the objection which we would make to them, when he says "knowledge without judgment and common sense makes women fearful as to what will happen to them." We think this criticism particularly applies to the very long list of disorders, both local and general, which may arise during the change of life, occupying 10 pages of the work, and of which some of those mentioned must be very rare. We think that the average woman reading this would soon have the impression that she was already beginning to feel the symptoms described.

The book is, however, well written, and some parts of it unquestionably are calculated to do good to suffering womankind, especially the advice to suppress the tendency, so common at the change of life, to fly to stimulants, and the advice to consult a medical man. He says, with regard to the latter, "this should above all be the case when there is much disturbance in connection with the generative organs, especially in the function of menstruation," and does not in our opinion lay sufficient stress upon the extreme importance of doing so, when there are irregular hæmorrhages and floodings at about the time of the change of life.

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* Puberty and the Change of Life. By J. C. Webster, M.D., M.R.C.P.E. Edinburgh: E. and S. Livingstone.

KEEP YOUR MOUTH SHUT.*

THIS little book, consisting of some forty odd pages is devoted to the importance of mouth-breathing as a factor in disease. The author's object, as set forth at some length in the opening pages, has been throughout the book to impress on mothers and guardians of young children the great importance which free nasal respiration plays in the maintenance of health.

The causes of mouth-breathing are given, amongst which we find the habit of lying on one side, rheumatism, gout, mentioned with other more well-known ones.

He then goes on to enumerate the many dire results which will happen if such a state of things be not checked. Though agreeing with much that he says on this subject, we can scarcely go so far as to say that mouth-breathing is the cause, in varying degree, of most of the physical troubles to which civilised mankind is subject.

The treatment is shortly discussed, and the book ends with a chapter on Ophthalmia of infants, which, foreign to the title of the book, seems to have been introduced to give the author an opportunity of airing the extremely strong views he holds on midwives as a body.

Addressed as the book presumably is, to lay readers, we venture to think the free use of medical terms such as "spurs of the septum," "specific and idiopathic," "Eustachian tube," "laryngismus stridulus," "turbinate bones," and others with which the book abounds, is harmful and likely to be misleading.

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* Keep your mouth shut. By F. A. A. Smith, M.D., C.M., Glasgow.

New Inventions, Drugs, etc.

MESSRS. PHILIP HARRIS AND CO.'S CATALOGUE.—It is very good advice to a young doctor to spare no money on books and instruments. The latter are more especially a stock in trade which will always repay him. How many men have owed a substantial part of their reputation to the use of a novel instrument—made in Germany? Oh! very likely—as the public has an immense faith in all mechanical means. Such an illustrated catalogue of instruments and appliances as has been published by Messrs. Philip Harris and Co. is well worth the attention of every young practitioner. We have been especially struck with the multitude and ingenuity of the midwifery instruments.

A.B.C. DIARIES—(Burroughs, Wellcome & Co.)—The A.B.C. Medical Diary and Visiting List for 1893 is now ready. It is of the same size as last year's edition, and contains—Space for recording visits to either 56 or 112 patients, according to the requirements of the doctor, pages for cash account, obstetric engagements, vaccination engagements, engagements under Factory Act, memoranda, etc. With the Diary is bound on thin toned paper the Excerpta Therapeutica, which contains the very latest information in Therapeutics, culled from most recent editions of works on the subject, English and Foreign Medical Journals, etc., the authorities being noted in each case.

The 1892 edition was generally pronounced as being the most convenient, compact, and useful work of its kind, and the present issue seems in no respect inferior.

THE HIGHEST AWARD ANYWHERE.—"Vinolia" Soap has been awarded the Medal of the Sanitary Congress of Great Britain (Sep., 1892). This is the highest award in the world, and is not granted until after exhaustive analyses and investigation.

ERGOTIN TABLOIDS.—(Burroughs, Wellcome and Co.)—We have received samples of these Tabloids of Ergotin, each Tabloid containing three grains of the purified Extract of Ergot, sugar-coated. Many of the failures experienced in the use of this drug have undoubtedly been due to the inertness of the product employed. In the Tabloids the greatest care has been exercised to ensure the full therapeutic activity of the Ergotin by previous standardisation, and they will therefore be much appreciated by the medical profession for use in those cases where the employment of a prompt and reliable preparation of Ergot is indicated.

Miscellany.

A GOOD EXAMPLE.—The Proprietors of "Vinolia" Soap are sending over a hundred poor children for two weeks into the country. most of whom have never seen the green fields before. Next year Messrs. Blondeau et Cie. hope to send not less than a thousand. They are giving every employee in their soap factory at Malden Crescent, London, and at their warehouse and offices at Ryland Road, London, a vacation of not less than two weeks. They employ a large number of young girls as piece-workers, all of whom are to have two weeks' vacation and wages. It may be observed incidentally that these girls work forty-six hours per week, and on the finishing floor is a piano for their use during the noon hour and the quarter-hour reserved for afternoon tea. The firm provide a library containing works of fiction, etc., and contemplate establishing a reading room and gymnasium. There is a sick club composed of all the employees, so that in case of illness each one may be provided for.—*The Chemist and Druggist.*

New Books, etc., Received.

A Treatise on Gynæcology, Clinical and Operative. By S. POZZI, M.D. Vol. I. London: The New Sydenham Society.

A Handbook of the Diseases of the Eye and their Treatment. By HENRY A. SWANZY, M.A., M D. Fourth edition, with Illustrations. London; H. K. Lewis. 1892.

Hygiene and Public Health. By LOUIS C. PARKES, M.D., D.P.H. Third edition. with Illustrations. London: H. K. Lewis. 1892.

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THE
BIRMINGHAM MEDICAL REVIEW.
DECEMBER, 1892.

ORIGINAL COMMUNICATIONS.

AUTHORITY IN MEDICINE AND ITS LIMITS.

THE INAUGURAL ADDRESS DELIVERED TO THE MIDLAND MEDICAL SOCIETY, NOVEMBER 3rd, 1892.

BY J. F. GOODHART.
PHYSICIAN TO GUY'S HOSPITAL.

GENTLEMEN.

When your honorary secretary, in requesting me to deliver your inaugural address this year, accompanied his note by a list of those who had in past years filled the office of your lecturer, it was at once apparent how great was the compliment that your council had offered me, and for this no words of mine can find adequate expression. But good offices of this kind are like the silvery lining that is said to tinsel the edge of every cloud. Brightness of any form implies the existence of its opposite; and behind every lightning-flash there is the storm. And great indeed is the effort required of one who occupies the post I do this evening to keep up to the ideals you have asked of and received from the distinguished men who have preceded me. It is indeed fortunate that this effort, whatever be its outcome, must be to anyone a pleasure.

I have chosen as the subject upon which to address you to-night Authority in Medicine and its Limits. And I have done so because it has always seemed to me that of the several or many hindrances to the progress of that great art or science to which we all belong, authority is one of the most prominent.

And first of all I must clear the ground by saying that we cannot do without it. Authority and its limits connotes the necessity of authority of some kind. And much as the spirit of the age tends I think to an irreverent scepticism of the wisdom of our forefathers, no one who looks back over the record of the progress of medicine, piecemeal even though that record be, but must admit that the practice of to-day is largely founded on the precepts of the past. And indeed I think it should be held of every true consensus, based though it apparently may be upon the irrecoverable reasonings of the past, that it had, of the two, better be received as true than contemptuously dismissed as wholly false. There is generally something at the bottom of all teaching of this kind, although too often the kernel is little capable of demonstration. Syphilis, for example, is a common cause of aneurism of the aorta; but how little direct evidence there is in favour of that assertion, for the facts that go to prove it are few in number in comparison with those that are of an equivocal value. Medicine indeed unfortunately abounds in situations where, if we wait for certainty, we shall never act at all. Therefore let it not be supposed that in discussing the limits of authority to-night I have any view of unsettling the groundwork of our art. It is, on the contrary, because we are so dependent upon the age gone by; because ours is still so much of an art, so little of a science; because authority, by catching and condensing the true sense of progress, as sometimes it surely does, is so important to us; that it is worth while to engage ourselves upon its border-lands—that it is wise to consider its limitations. I could wish to shew to-night that this is an interesting occupation; I shall certainly make it clear that it is a searching one, for it chiefly concerns itself with the use of the probe and with the putting questions that cannot yet be answered.

Now authority, as it shapes itself in my mind as being too often prejudicial to the progress of medicine, is a many-sided influence, and irresistibly recalls, as I think of it, the triune John so wittily described by the Autocrat of the Breakfast Table. There is the authority of tradition, there is the authority of the schools, the authority of one's own personal experience, and there is the authority of public opinion. All these guide and mould the onward march of what we call the practice of our profession. I will not say that even they exhaust its sphere, but they embrace at any rate its more notorious activities, and I propose to say something about each. It is impossible to keep the several phases of authority distinct; tradition and the teaching of the schools are practically very much interwoven; and no doubt the authority that accrues to us out of our own experience is in some measure evolved under the stress of public opinion; and these again have much closeness of relation with those of which I have just spoken. Still there is reason in the attempt to distinguish between the several modes under which authority presents itself, if for no other reason, that we may be the better able to analyse the impulses under which we act; so I will first say something about the authority of tradition.

No one I suppose doubts the reality of this agency in retarding the progress of medicine. Its influence has been known and still exists probably in every department of practice. Some terms in general use come to mind at once in illustration of this. Surely in all that is comprehended in the term "bilious" there is much of this element; and not less so in the condition or conditions wrapped up in the word "acidity." "I have suffered from acidity all my life," says one. Another, with more reason, informs us that everything he eats turns acid; another says his blood is so acid; while for another, his complaint is turned into a prayer—"Doctor, please don't give me *acids*." And these varied descriptions correspond to equally varied phenomena. With one it is the occurrence of acid regurgitations from the stomach; with another it may be the outbreak of nettle-rash or some other ephemeral skin eruption; for another it may be the passage of uric acid; and so on with any number of aberrations of our many functions, excepting always that that most real condition of all, a curdled temper, is seldom attributed to the juices, or indeed complained of at all by the (?) patient. In the nebulous outskirts of gout, also, tradition floats about; while in the treatment of disease there is still much, both in the matter and manner of it, that hails from the same source. Still, notwithstanding all this, I must fain confess that, comparing the practice of to-day with that of the past, it is a matter of marvel and congratulation how much we have passed out of the range of this particular influence, and how much, even where we can perhaps still trace it, it is blended with that more substantial authority, the teaching of the schools.

Here, again, I must remind you that it is with the *limits* of authority, or the extent to which it is to be allowed to guide us, into which it is my purpose to enquire. Obviously an authority such as this of the schools is not only legitimate, but absolutely indispensable. I confine myself to the confines of the sphere of its influence.

Many of you will, I doubt not, remember that a year or two ago there was a discussion in the daily journals about a latter-day development of the—I was going to say *art*, but I think it might almost be called a science—of advertisement that goes under the designation of sky-lines or sky-signs. I apprehend that in this only-not-a-city, Birmingham, and with the intellectual primacy that a town of such a magnitude imports, there is no need to go into any descriptive particulars, for no doubt their grasping and sordid unloveliness too often projects itself upon your bruised vision. It was fitly urged against them that they were dangerous; and some poetic souls did, I believe, raise the cry of ancient lights, and of the right of all mankind to the unstinted enjoyment of the blue firmament of heaven from day-dawn to "the incomparable pomp of eve." I would not belittle any argument of this kind; I want to push it home, and say that if a man has a right to the unrestricted expanse of heaven, so, surely, has he a right to the use of his own brain, and it is just this that sky-lines and any form of advertisement obtruded upon him for selfish ends filches from him. It is all very well to say you need not look at these vulgar accompaniments of modern civilisation; who can help looking at them? They meet the eye everywhere; and, meeting it, they steal in upon the mental vision, are grasped by the quicksands of the brain, and they thereupon become a permanent addition to our intellectual fortune, or misfortune rather, to crop up again at all sorts of inopportune moments, perhaps even to darken our characters in the mutterings of delirium, when we are looking out upon the dark waters of the Styx, and when we would most wish to leave the behind respectable. Yes, advertisement has never yet been considered sufficiently from its criminal aspect; but what an injury it thus inflicts upon mankind. Short-sighted people have much to be thankful for.

But what, you will say, has all this to do with the subject of authority in medicine? It has very much to do with it; for the law which I have illustrated by an appeal to advertisement comes also into play with every teacher, and for every statement that is made by one whose position gives him a right, or puts him under even a supposed obligation to speak to his fellows. Do those whose function it is to teach have sufficiently present to their minds how much there is we *think*, how little we really *know;* that what we say to others as the result of our own observation, valuable or valueless, remains with those who hear? Take any text book we like, those of present authors not excluded, and where it departs from the bare statement of observed facts—and even there come in the observer and the thing observed as sources of fallacy—it abounds in questionable deductions and inferences. But worse than that, one man of repute makes a statement and another copies it; and, indeed, authority is made, much as animal poisons are intensified, by passing it through successive culture-grounds, not of agar-agar, but the much more virulent cerebrine and writing fluid. And in this regard it has often come forcibly to my mind how difficult it is to get outside the dicta taken in in our suckling years. Only the other day this thought cropped up as I was reading over the answers to an examination paper in medicine at one of our public examinations. The question was the causes of infantile convulsions; and I should be sorry to say how many of the candidates had given, as one of them, pins in the clothing. I pitied those young men, because all through their lives there is a good chance of convulsions and pins in the clothing being linked together as associated ideas, and that the thought of one will call up the other. But I pity more the writer who has put it in his text-book, not because I deny an occasional and exceptional occurrence of this kind, but because, by stating a trumpery detail of this kind, he has done something to convert a safe deposit into a lumber-room; and goodness knows there are too many accidental opportunities of this in a man's life to allow of a cold blooded operation of this sort being considered a venial one. And there is no need to go far to find plenty of instances of the ill effects of authority that grow out of teaching. They mostly concern themselves with the assumption of a precision of knowledge that does not exist in fact. One that occurs to me is the endeavour to differentiate too closely between the *late* lesions of the joints in the three diseases, acute rheumatism, gout, and osteo-arthritis. It is commonly taught that knobby knuckles are an indication of gout. I do not say they are not, but I do say that they are frequently present in those who have never shewn the least sign of true gout, and that the condition is an indifferent one that is present alike as the common outcome of several distinct states. the three conditions I have mentioned to wit, and certainly I would add is an expression of mere senility also.

And having introduced the subject of rheumatic gout, and meaning by that term the disease called more precisely osteo-arthritis, I may also add concerning it, as cognate to the present subject, that it is often treated by diet of some routine fashion, as if it were always the same disease, or, rather, owned the same cause. But does it? I should suppose that my own experience is that of everyone else; that there are cases of it that must make us say that we have no knowledge whatever of any modifying action either of food or drink upon them; and that they are like osteitis-deformans and osteo malacia, of which no one can yet say how they come, or that any system of diet cures or even ameliorates.

And while touching on this matter of diet in this disease, although I shall mention it again from another point of view, let me raise the question of diet in relation to enteric fever just to ask the question whether the practice we have derived from the schools is not a little too rigid in this respect. I had several times found myself in great difficulty from the paralysing power of the commonly accepted teaching that these cases must have nothing but milk. But one day I read a lecture given by Sir William Jenner—I should not wonder if it were at this very Society, at any rate in this neighbourhood—in which, although I am sorry to say that I have forgotten all else, this has always remained: "One may give too much milk in typhoid fever." Obviously here was the teaching of one who had emancipated himself from the trammels of teaching. It made me think still more on the subject, and certainly was one of the most useful lessons that I ever learnt. No doubt in fever, when the digestion is weak, it is necessary to supply the stomach with material that is the most easy of utilisation; but there are many articles of food that come up to that standard. And I think that the dominant factor that has led up to the regulation of the diet of a case of typhoid fever is the risk of inducing perforation of the intestinal ulcers. But I believe the authority thus engendered to be disproportionate to the evil it is aimed at; for if we except such things as green apples, which may be taken as a type of such things as a case of enteric disease would be in no case likely to get except through the ignorance or foolhardiness of a friend, I do not remember at this moment to have ever seen in all my experience in the *post mortem* room anything in the small intestine that could have had the slightest influence in this direction. It has always been a matter of much physiological interest to me that under the most varied diet; in full health, as in death from accidents; in ill-health; at all periods after a meal, and so on, the quantity of material in the small intestine has never been much more than enough to cover the surface with a thinnish layer of creamy stuff. There has never in my experience been anything approaching to distention, and nothing in the nature of particles of solid material that could have done any mechanical harm to the ulcerated mucous surface. And I argue from this, not indeed that the whole teaching of the past is to be upset, but that if necessity should arise, there is no risk in varying the diet much more than I have ever seen hinted at in writings on the subject. Very many cases, the majority no doubt, do very well upon milk. I seldom give them nothing but milk; I much prefer alternating meals of milk and broth. But every now and again—and this is quite often enough to be a distinct perplexity to one confined by strict rule to milk—there comes a case where milk is not well borne, or is distasteful. There come others, of which I have seen several, where the pangs of hunger on this diet have been considerable. Then it is that some variety becomes a great help; and then bread and milk, custard pudding, jellies of various kinds, even a lightly poached egg, or a panada of pounded meat may be called in to mitigate the irksomeness of one long monotony of milk.

Let me next pass to quite another instance of my subject, and it shall be that interesting product uric acid Of it I learnt in my youth that it indicated a gouty constitution, and that it was necessary for the lithæmic that they should become as babes, and be deprived of all strong meats. I had to find out for myself that there are many other points in the natural history of these people that have to be considered, and that, as a matter of fact, a very large number of them are in no wise bettered by this too common rule of practice. Of late, I am glad to say, that a shelter has come from authority for the holders of any such heterodox an opinion, for Sir Alfred Garrod, with an unrivalled experience, has said, I believe, that meat-eating has not much to do with its production. I do not think that Sir W. Roberts would go quite so far as that, because I noticed that in his recent lectures meat was put high in the scale of those things that go to make it, chiefly, I think, because of its highly nitrogenous composition. I am afraid my mind is not of a logical order; at any rate, I incline to be sceptical about chemical processes and their results when the human body intervenes, and is in fact the manipulator or the laboratory. You see there are all sorts of delicate chemical operations going on at the same time, and yet no one has a room to himself, so to speak; and, believer as I am in the great future in store for physiological chemistry, I do not think that we have yet arrived at that state of knowledge by which we can say in what form things taken in will reappear. In the laboratory we can see the thing through, and the steps may be as plain as possible. This is tissue stuff, that is heat stuff. But is the human kiln so limited in its powers as this? Is it not more fitly regarded as a beautifully arranged clearing house, or as a mutual accommodation concern in which the borrowing and lending go on in all directions, so much so that, if it were possible, even the primary elements might almost seem to be in danger of resolution, and the result of which is the bewilderment of even the very elect? And as regards uric acid, although its chemistry has been worked out pretty completely in the laboratory, we can hardly say as yet whence it comes. The great question, in my own mind, is—Is it always produced in the same way? Does not each individual elaborate it in individual fashion? Is it not with chemical products, as it is with structural changes, that there are limits to these, and that, as there are many diseases represented by one anatomical deviation, so it is with uric acid and many another animal output? Nay, it is no question. We know that it must be so; and uric acid is thus the ash of many a burnt out fire.

Nor do I hold with the criticism that some would make that this is putting the cart before the horse. With all due deference to authority, I cannot think there is a uric acid tide which, taken at the flood, leads on to all the various ills that are supposed to result from its presence, and I prefer, as I have said, to look upon it as the result of some at present unknown physiological processes natural or unnatural—an expression on the part of function equivalent to the anatomical one of organic change.

The question of particular drugs for particular diseases; the treatment of phthisis by residence in foreign climates; our ideas about the nature of the various forms of renal disease, and their appropriate treatment, might all serve very well to raise the question whether we are not too much under the thumb of routine engendered by the authority of well-known names. And it is certainly so with much of the modern system of water cures. Hosts of people are packed off to baths upon no real basis of knowledge. We do a mental chuck-farthing, and trust to luck and our good intentions.

I come next to the authority of the individual. It is a somewhat composite one, and is in part dependent upon the enthusiasm, or something akin to it, of our successes; in part to the dread engendered by failure in such cases as have gone before that seem most like the one in hand. And I fancy that the enthusiasm of success is more masterful and less philosophical than the teachings of failure. For life, whatever it be, is so responsible a thing; the forces that endow it are so little legible to our poor and too often hurried ken, that to watch the sails sagging listlessly as its breezes fail, and then trimming again as now others rise, apparently, as it may be, in response to the pilot's *will*, is a thing that sends the warmth of a gulf stream purling through our veins, and submerges the cynicism of failure. None the less, the teachings of success as regards the treatment of disease are far less instructive than the searching criticisms of failure, if only we will give ourselves time to attend to them. But I have also to say that on both sides of the question the results of our interference may be more apparent than real; and whereas on the debit side little good is done by insisting on this, even the most well-poised mind can hardly be blamed for striking a balance on the credit side, and this leads to the introduction of a personal equation that underlies the whole of the records of the results of treatment. Who here is not familiar with the poor figure that say nine out of every ten remedies that are vaunted as the result of successful use cut in other hands than those of their sponsors? This is not to say that the original records are dishonest; it does shew, I think, that, making full allowance for the variability of the individual constitutions operated upon, there is a well-nigh insurmountable tendency to bias, in the majority of observers, as to render the large proportion of the records I speak of as untrustworthy.

Another remark, too, seems worth the making. We all know how cases of a particular kind seem to have a tendency to come in groups of twos and threes. Is there anything in our attitude of mind that makes them come? A striking case makes a great impression on the brain; we think about it, and the attention is monopolised by it; and as we go along the daily round, it is interesting to notice how even the at first sight most unlikely elements seem soon, as we look at them, to mould themselves into the picture and harmonise with it. Is it that they really do harmonise and come into the picture *fittingly*, or is it that we read our preoccupation into them? I expect this is too often the case. At any rate, I am conscious of this experience, that I have often when working up a subject, for an occasion such as this, for instance, seen points in cases that would serve as illustrations, and have made a note of them for use when the time should come; and then going back after a while to make use of the material, with the activity of my mental sight cooled down, I have puzzled over the note and tried to see in what respect it could bear upon the subject in hand, and often, I regret to say, could find no fitness therein. I should think some of my hearers must have made acquaintance with some similar experiences; and therefore I make bold to ask again whether we do not *often* read our preoccupations into even unlikely facts. There is no doubt we do, however much we might like to think otherwise. We cannot get outside ourselves. It matters not what calling we take—let it be painting, sculpture, the drama, anything—in all but the smallest bull's-eye of the world's intellect there is a tendency to reproduce the same types, to say the same things, to twiddle our thumbs in no more than two ways. You can see this any day in painting, Go into any gallery and study the works of many an artist, and you may readily see what a tendency there is for the same faces to turn up over and over again. I remember a celebrated picture of a few years ago, and all the faces of the many depicted were palpable modifications of one or two originals. We can readily distinguish the work of many an artist of first rank by the tricks of his style or the general resemblance that one of his pictures bears to another. It cannot be otherwise in the practice of medicine. It is thus that the specialist runs an extreme risk. Always occupied with his own small corner of the human economy, he sees nothing in life outside it. No blame to him; he cannot help it. And so for one, the history of the world, past, present, and future, turns on uric acid; for another, everything is nerves; for another, gout; for another, indigestion; and so on. If Art, counting as its votaries all those who most live in the realms of idealism, cannot rise above it, it is small wonder that they who follow more prosaic paths are also unable to evade the imperious law; small wonder that other people's motives and activities are interpreted by our own, and that it is seldom indeed that a great seer rises from our midst.

Ah, yes! how precious a thing as regards the personal guidance of one's own walk of life is this authority of our own individuality. I suppose there is no one here who does not know that for himself at any rate—say, for example of one class of forbidden fruits, he cannot drink beer without getting his joints or muscles painful; or that he cannot do such and such things; or that his minor ailments usually follow a certain course, and which if he knows not by the time he has come to the retrospective and reflective slope of life, he is rightly dubbed a fool. But how treacherous a thing is this sort of experience when it is made to do duty for the giving advice to another man. It is arguing from the particular to the particular through the general with a vengeance. And yet how gaily we cut that other man off his beer because we cannot take it ourselves, and perhaps tell him to take whisky because we can. And this is a truly important aspect of this section of my subject because of the results; for the authority created by this knowledge of the working of the individual organism not only influences or regulates our own course of life, it acts upon one's fellows, moulds public opinion, and so begets fashion. And think of the injury that is done to medicine by fashion There is no difficulty in giving any number of illustrations of how easily this sort of authority becomes a craze. I might begin with a personal confession, which is this, that I have learnt as a matter of experience that tea-drinking late in the day is very likely to give me an attack of nettle-rash; and I have many a time been dominated by these episodes in my own life, and have cut off tea for those who have suffered from that troublesome affection. I know another physician who, if he takes milk in any quantity for more than two or three days, so he told me, gets pain and stiffness in some of his smaller joints; and so when osteo-arthritic patients consult him, milk is tabooed. Have either of us a right to be so hard upon these articles of diet, if we go beyond ourselves and think how enormous a preponderance of evidence there must be on the other side, if only we were in a position to collect it?

Another child of similar parentage seems to me to be the common idea that is held with regard to the causes and treatment of obesity. There is no more interesting study in the whole range of medicine if someone would only take it up and write of it as he found it. It has been much befogged on the one hand by the theorists, and on the other hand by the man with a system to advertise, and both are dangerous guides. But anyhow, it has come down to us that fat and starch and sugar make fat, and no one until quite recently has had anything else to suggest. Yet, I venture to assert that if anyone in all these decades had given half an hour's thought to recalling his own experience and knowledge even among his friends, he must have seen at once that teaching and experience do not accord. Look back upon your past to-night, and I am sure you must remember several people who by your own orders, or those of someone else, have tried to reduce themselves, but in whom the *results* were as nothing, in proportion to the rigour of the means, and I question whether many of us can recall more than, at most, one or two cases where the plan has been anything but a failure.

But do sugar and starch make fat except within narrow limits? I often wonder what proportion of the civilized world has been deprived of sugar upon one pretext or another. It must be a very large one. Is sugar such a sinner that it needs to be thus hardly dealt with? Is it not rather a food that is indicated by the strong craving for it that exists, that is necessary for young life; and for those of riper years is replaced by other articles, and so the extravagant taste for it declines.

The fact is that fat making is a very subtle bit of animal chemistry, and I think there must be means of elaborating it that we have little idea of at present. So much so that I believe it would hardly be an exaggeration to say to the obese: You may turn away from your starches and sugars; you may keep a "may-eat" and a "may-not-eat" in your pocket; you may drink whatever mineral water you may fancy; you may take exercise more than enough to satisfy even your doctor's exacting orders, and the odds are all against your accomplishing your purpose. And the latest method of dealing with fat does but confirm what I say, for it is the equivalent of the appeal to the sword in the case of nations. It is neither more nor less than desiccation. Our 41·5 of solid residue naturally comes to the front under such circumstances, but what about our health? Let the average life of a jockey determine. And of the passage of many a dictum of irresponsible medicine into fashion, any number of examples could be cited. Think of the hot water craze, which seemed to me to rise in favour, as soups declined. "I never eat beef" is another. And I remember a year or two ago when disburdening my soul of its disbelief in a number of popular practices, this being one of them, someone asked me in the medical press, whether I ordered my patients *pork*. Let me answer the question now, as I did not then, by saying that pork has got a much worse character than rightly belongs to it. And indeed, it seems to me that our notions as to the digestibility of foods is somewhat capricious. Veal is often put into the proscribed category with pork, so that I suppose that veal broth ought to be stronger than other broths, and yet it is generally put on a par with *chicken*, chiefly, as I believe, because both are pale liquors. But to return to pork, unless the rind be included, and I should not ask my worst enemy in his soundest health to eat that, it is not the beef as beef, the veal as veal, the pork as pork, that does the harm. I would say as the Robert of Mr. Punch might do, to my enquirer "It's the trimmins as plays the mischief." And then one word upon wines and spirits. Authority condemns champagne except for the seriously ill; it condemns sherry and port, and it would almost seem that the moderate but habitual drinker is forbidden all the wines in his cellar that he has any care for, except perhaps a vintage claret, at some fabulous price per bottle, and then the order is speedily hedged, by suggesting as an alternative the imbibition of so much whiskey. I do not of course deny that champagne disagrees with some people. No doubt there are those who glibly tell that if they touch but a glass of champagne an attack of this, that, or the other befalls them. But when this idiosyncrasy for the few, is made the rule of life for the many, I object. We must all of us know instances of—gouty people if you like—who take their moderate allowance of one forbidden wine daily, and seem to do very well upon it. It is in fact as Sir William Roberts has well said in respect of diet, not so much the *material*, as the *quantity* of it that is at fault, and that is responsible for the common sense of mankind being put under the restraints of lunacy,

Another good example of the authority of one's own experience is to be found in the discussion that has grown up about the action of chloroform as an anæsthetic. For instance, I have formed the opinion, from a very limited and now rusty experience, that every now and then this drug kills by some seemingly direct action upon the heart. And it makes no difference to me how many Hyderabad Commissions sit, or how many learned men sit upon them. Nothing will shake my belief that death comes about sometimes by other means than that of respiratory failure. All this is very wrong, but I cannot help it. I am the slave of the authority of what I have seen.

And this illustration leads me on to the authority of outside opinion; for there has grown up in the mind of the public—whether from the teaching of medicine, from a rational inference on its part, or from the panic caused in all such cases by the coroner's jury, I do not know—that death in such cases comes about as I say I obstinately believe it does. So when an operation is to be performed, the patient, if he can afford it, goes to his doctor to ask if he or she may take chloroform. Now what I ought to do under such circumstances is to say, "My dear sir, or madam, no one can answer your question." It is not the diseased hearts that stop under chloroform; it is the heart whose behaviour or motive is past finding out. Yes; no man can tell beforehand whether the verdict of fate will be thumbs up or thumbs down in such a matter, except upon the basis of the average of chances and the best administrator that can be procured. Yet, knowing that a catastrophe will occur now and then whatever we do, and that in all probability the examination of the heart will add but little to the safety of the patient, provided always that he is under the hands of a competent administrator, I am obliged to examine the heart under such circumstances, and to give an opinion of the smallest possible commercial value for the patient's satisfaction.

And as I write this, another good example occurs to me of this play of outside opinion, It is condensible into four words, "keeping the patient up." I doubt much whether any other dictum in the whole range of the treatment of disease has a more dread responsibility lying at its door. There can be nothing much more sure than this, that disease seldom kills by very starvation; except it be cancer of the œsophagus or stomach. I doubt if any of us could say that food is harmless. I am often appalled by the amount of concentrated nourishment that is being poured into the sick under the supposed imperious necessity of sustaining him. But if we think the matter out from a physiological point of view, we can then surely count upon our fingers the few conditions when a sick man may perhaps want more than he does in health. Even "he fed fevers," although a good epitaph to keep a wise physician's memory green, should always be ridden on the curb, it is so likely to run away with the doctor, the nurse, the friends, and the patient. It must often have struck every one of us, how little food is really necessary to satisfy the conditions of health, and all of work, save perhaps the hardest kinds of toil, for those who have reached the full period of growth, and who have only to keep themselves so to speak. And if so, what is there in the greater part of disease that should require indiscriminate stuffing? Take any disease you like, a case of acute pneumonia, or some chronic pulmonary stasis, whether by heart or lung, what is there in any of them that requires more food than a state of health. I remember years ago reading a lecture by Sir James Paget on Carbuncle, in which the burden of his lay was whether such cases were not steered more successfully by a moderate diet than by the full feeding and stimulation to which they had been accustomed. How many cases does one see in the course of the year that require and are benefited by a tablespoonful of brandy every two or three hours? It is a prescription that is very often in use. Does it ever *kill* in the good intent to cure? I must ask all these questions because I feel them necessary, but then I must confess that such is the force of teaching, such the strength of the authority of public opinion, that when a man is ill, he is weak, and must be kept up, that even holding the strong views I do on these matters, I too often leave a bedside with the disturbing reflection, that even so I may be offending against my own convictions; that I may be doing harm instead of good. You see we do not *know*. And the man of vigorous experience-drawn convictions, is altogether outside the pale of physiology and is master of the situation. I read this in the *Spectator* the other day: "Half the harm that is done in the world comes from the eloquent preaching of imperfect convictions. It is possible to convey and even strongly implant beliefs which are defied by every logical principle in the mind of one who diffuses them. It is difficult not sometimes to do this, for beliefs are tied up in very stiff bundles;" and this is very true.

But before I close I must needs return once more to the authority of the individual to allude to a negative aspect of it that is not without its interest for the reflective. There is not only an authority begotten for us by our experience, there is a much less legitimate one that shadows our ignorance. It is a form that is said to be peculiarly liable to infect the scientific mind, and I think there is some justice in the criticism. Professor Tyndall's phrase, "the scientific use of the imagination," was exquisitely happy, but very paradoxical. Pure science loathes imagination. It is as ice to the poetry of life.

But when, as is the case in medicine, the unknown, perhaps the unknowable, plays so large a part, we must be prepared to sympathise with lines of investigation, if only they be honestly pursued, even if to the logical mind they should seem to promise no demonstrable results. From this point of view the demand for new drugs and their application to all and sundry diseases, which at first sight seems but questionable wisdom, has its justification, if only it be kept within the bounds of critical observation.

And there is much about electricity of which this holds good. But let me first remind you of a group of phenomena with which you are all well acquainted, and yet of which I think I may say you can offer no explanation whatever. I allude to the effects of sudden climatic changes in upsetting the balance of health in various ways. There can be no doubt I suppose that your corns shoot at the onset of wet weather. Why is it? There are a very large number of people who are thoroughly upset by a thunderstorm. I know several ladies who are waked out of a sound sleep at the onset of a storm, and this quite independently of the noise of the thunder or rain. You could all supply me with any number of cases of diarrhœa, provoked by the onset of unsettled weather; of headaches in the same way. There are all the rheumatic or myalgic ailments that are supposed to own a similar cause. I should suppose too that the paralysis that divers get and those who work in cofferdams is allied to these commoner ailments; and I often wonder what controls them all, and how much there is in this direction that remains for the future to discover.

Now when brought into contact with such phenomena as these, one cannot but receive, as one suggestion which they offer, that there may be some truth in the popular idea that there is a powerful health influence in electricity. And one may well indeed wish that our knowledge of electrical fluids could make swifter march, and that they could be on tap for remedial purposes without the intervention of trade and quackery. The practical side of this matter chiefly meets our ear in this form: "Do you think an electrical belt would do me any good?" We cannot recommend these appliances; they are outside our knowledge. But how do we answer such enquiries? They are made for the most part in respect of what one may perhaps call trivial pains and aches, although the most recent instance of an application of this kind that has come before me—not applied at my suggestion—was for one of the few instances I have seen of pure tic. But these trivial aches and pains, although by their very frequency they have engendered a familiarity that has bred contempt, nevertheless are destructive of a large slice of what would otherwise be the cake of human happiness. How do we meet a request of this kind? Most of us, I fancy, turn up our noses and give the poor fellow a plain indication that we think him a fool. And if, as is certainly the case, a proportion of such people declare that a recourse to such means has been the instrument of relieving them of their troubles, we think the unutterable even if we had the courage to make audible retort. But is this quite the way to meet such questions, considering that the adviser and the recipient of the advice are still all but equally battling in ignorance with this mystery of Nature and of Pain. All we incline to take cognisance of is the fact that under the cloak of electricity many a charlatan grows rotund, and small blame to us from that point of view, if we decline to touch pitch lest our clothes be defiled. But medicine is constantly taking its votaries into queer corners, and I cannot but think that the matter of constant minimal electrical currents requires careful investigation at the hands of trained and impartial hands. I could wish that someone should take it up, who did not require to make a living out of it. This has often occurred to me before now, but it has never been more present than when some months ago I was reading a lecture delivered at the Royal Institution by Professor Tessler. I may, perhaps, be pardoned for any inaccuracy of language that I use in regard to it, but the lecturer made use of large quantities of electricity as an illuminant by passing it through tubes of hydrogen gas, and I remember that a feature of the address was that he introduced himself freely into the circuit without harm. The idea it gave to me, I daresay a thoroughly erroneous one, was: Here is a man who brings sheet lightning into your drawing room, and I could not but feel how pregnant all this might some day become with light and alleviation for a large class of ailments, for which we can as yet do, often little enough, at least so the ailing in that way think. But I hear someone object that we have our properly constituted means of applying electricity. We have. But to be satisfied with that, is to repose under the shelter of the authority of ignorance, for the sending a current this way or that through the body twice. or three times a week, or even for ten minutes every day is a very disappointing remedy, and hardly, if at all, comes into comparison with the power of constant service or even of modified environment, such as I am supposing may be within our reach in the not far distant future.

May I say further that for fear of this authority of ignorance we do right to be at once tolerant and intolerant of principles—tolerant because, I imagine, that no two physicians meet over a case, and albeit that they give the same drugs, give them from precisely the same motive? The value of a drug may have been proved empirically, but when it comes to be a question in what its value consists, there is plenty of scope for difference of opinion. Take iodide of potassium for the treatment of aneurism: *A* will give it because he thinks that it favours coagulation; *B*, because it reduces tension, and so eases pain; *C* will give it because he thinks that aneurism is often due to syphilis, and certain reactions are wrought in the sac wall by the drug that makes for amelioration; and so on. Therefore, however unlikely to be true another man's motive of action may seem to me to be—and there is none more unlikely, I venture to think, than that iodide of potassium has any direct action in promoting coagulation of the blood—I never quarrel with such opinions, because I know that my physiological reasoning may seem equally at fault to him. But when it comes to be a *covering* principle that is advocated, "Similia similibus curantur," for example, to take a common but by no means isolated illustration, we are dealing with a motor power that demands the strictest scrutiny. Principles of this kind, in the universality of their application, are dogmas which seemingly can have no rational basis; their tendency is to curb individual thought; and he who acts within an environment of that kind cuts himself off from what should be his chiefest function—his power to adapt himself to the individuality he undertakes to treat. We can allow no fetters of that kind in the ever-varying phases of disease. A man who treats disease upon a general principle, if he sticks to it, is governed by routine; and I plead to-night for a freedom of thought and idea as regards the individual which, while it takes cognisance and advantage of all that has been done in the past, whatever the motive under which it has been evolved, yet owns no *law* in the present other than is the direct outcome of the progress of physiological investigation. It will be a long time before physiology in its largest sense will have advanced so far as to surround us with law and order in all the multitudinous circumstances in which we have to act; and till then, empirical methods of treatment must, and will, still usefully hold their ground, and authority as I have discussed it to-night must still largely influence our practice. But we may well remember that in our eagerness to cure disease—an eagerness that in itself is wholly good—we are too likely to be urged by the exigencies of the case, and the impulse that is derived from the force of authority, to abandon the attitude of enquiry and observation for that of implicit faith. Now faith without works, whichever way we read it, is dead.

THE ETIOLOGY OF CANCER.

BY T. LAW WEBB, M.R.C.S. AND L.R.C.P. LOND.

I USE the terms cancer and carcinoma as synonymous. It is well known that the hereditary nature of cancer is admitted by most of the surgical text-books as proved. According to Sir James Paget, as therein quoted, one-third of the cancer cases have a family history shewing that the disease occurred in near relatives of the patient. This seems to me a very large proportion, and it requires all the authority of that great name in pathology to make me accept such a statement. Many facts have come under my notice which go to prove that a family history of cancer is not nearly as common as this, at any rate, in the particular district of the Midlands in which my experience has been chiefly gained.

Practising here for twenty-two years, I have been able to learn from the older inhabitants a great deal about the antecedents of my cancer cases, and I have been surprised to find in how few of them could I trace a history of the disease in the family. This is the more remarkable, it should be noted, in that most people are aware that cancer is believed by the profession to be hereditary, and are anxious to account for the appearance of the malady in the poor sufferer by reference to some of "his sisters, his cousins, or his aunts," who have succumbed to the disease in time past.

How often I have heard my seniors say, when some fresh case of cancer has come to their knowledge, "What! So-and-so has cancer? Why I never heard it was in his family, and I know all his kith and kin, and have done for years." It is remarkable that, after making all possible enquiry, I can only find a history of cancer previously occurring in the family in four instances out of fifty-five cases ot cancer known to me during the past twenty years. I think that facts of this kind should be placed on record, and have their due weight in considering the question of the heredity of cancer. Even if we accept Sir James Paget's figures, two-thirds of the cases, or the great majority, are not accounted for by the theory of heredity, so that some other cause must be found to explain the occurrence of these, operating immediately upon the individual and not through the parent as an inherited faulty or diseased protoplasm. Otherwise, our knowledge of the etiology of this disease must be held to have been but little advanced by all that has been written and observed of late.

I am not at all satisfied that cancer is hereditary even in the moderate number of instances in which it seems to be so, and in which there is a clear history of a succession of cases in the family. For, until quite recently, tuberculosis was said to be hereditary, and the proof of this was held to be the frequent series of deaths from phthisis in a family. But since Koch's discovery of the cause of the disease in the shape of the bacillus tuberculosis, we believe that one patient infected another, who, in his turn, communicated his disease to brother or sister, and so continued the long line of disasters. And why may it not be thus with cancer? Is it not possible that it also may be no more hereditary than pulmonary tuberculosis? At any rate, it seems to me that we have gone on long enough dwelling on the importance of a history of cancer in the patient's ancestors. Let us allow our consciousness to play freely upon the subject, and consider attentively the residue of cases not so to be accounted for. Apparently, we may safely assert that advanced age, and injury or chronic irritation of a part, are the only causes universally allowed by pathologists of the present day as predisposing to cancer. The actual and immediately exciting cause we do not know as yet, although I believe that many good observers think that it will be discovered before long. It is probably some specific irritant, which causes rapid proliferation of certain tissues, thus forming the cancer masses. Whether this noxious material is irritating chemically, or is a particulate body, such as a bacillus or protozoon, which disturbs in other ways the healthy cell-life of the tissues, does not yet appear.

If, however, for the time being, it be admitted as a working hypothesis that cancer is caused by a specific irritant acting upon tissue-elements altered by age or chronic inflammation, or both these; then several questions naturally arise which merit serious consideration :—

Is this irritant or poison communicable to others about the patient whose age and condition predispose to cancer?

For if it is so communicable, many cases hitherto set down as hereditary, are otherwise accounted for, since the children of cancerous parents, when themselves past middle age, may contract the disease by prolonged contact with the sufferer during the nursing of a lingering case, or by handling and washing linen, etc., soiled with discharges.

Again, does this poison, or *materies morbi*, cling to, and infest certain localities, or even certain houses, like the leprosy described in Leviticus?

Dr. Haviland Hall insists that a study of the Registrar General's returns shews the existence of "cancer-fields" and "cancer-areas" in this country, and that soil and situation have much to do with the mortality from this disease. I would go farther and suggest that there are "cancer-houses," and cancerous wells or water supplies.

I shall quote a series of cases bearing upon these questions. It will be noted that I assume one cause for all the various forms of carcinoma. This is not postulating too much; for could there be diseases more widely differing from each other clinically than lupus, phthisis pulmonalis, and pulpy disease of a joint, which are all, nevertheless acknowledged to be due to the presence of a single irritant, the Tubercle Bacillus? And I fail to see why scirrhus, rodent ulcer, epithelioma, or any other forms of carcinoma may not proceed from one and the same cause, whatever that may prove to be.

In a village not two miles from my residence, are two houses under one roof, with a drain system and water supply common to both. I will call these dwellings No. 1 and No. 2. Twenty-six years ago, a man aged 28, living at No. 1, suffered from cancer of the rectum, of which he died. The diagnosis was confirmed by examination *post-mortem*. The house was next occupied by Mr. J. M. and his wife. This gentleman, aged about 60, two years after the death of the previous tenant, was treated for cancer of the stomach, of which malady he died, after a three months' illness with constant vomiting. His widow continued to live in the same house, and died ten years later, aged 65, from cancer of the rectum. A mass of tumour substance protruded externally before she died. She was ill about six months.

Before her death, however, Mrs. R., aged 50, who resided next door at No. 2, was found to be suffering from cancer of the breast, which proved fatal in eight months.

After the death of Mr. J. M.'s widow, No. 1 was occupied by three maiden ladies. Of these, Miss P. died four years ago, from cancer uteri, at the age of 58. She was assiduously nursed by Miss F., who also died last winter with all the symptoms of cancer of the stomach. Her age was 61. The other lady still survives in fairly good health.

None of these people were blood-relations, nor can I discover that any of them had a family history of cancer. This is therefore a remarkable sequence of carcinoma cases; and, in my limited research into the literature of the subject, I have met with nothing like it.

In a group of cottages much nearer to my house, nine cases of cancer have been treated in the past fifteen years. These dwellings are grouped together, and do not occupy much more than an acre of ground. All the inhabitants use water from a certain pump situate by the road side and close to a very filthy hovel. There are twenty houses in all; one cottage, enjoying a bad pre-eminence for dirt and discomfort, furnished three cases of cancer out of the nine mentioned above. In order to enter this hovel one has to stride across a small cess-pool in front of the door step. Here, eight years ago, lived an old man with epithelioma of the lower lip. I removed the growth, and was disappointed to find that no sooner was the operation wound healed than difficulty in swallowing was noticed, and in about four months he died of malignant stricture of the gullet. His widow continued to live in the same cottage, and so also did a male lodger, who had been with the old couple some years. This old fellow, a hardy, healthy-looking old man of sixty, working as a road maker, came to me two years ago for the removal of an epithelioma of the lower lip. This I excised, and he remains well, so far with no recurrence of the growth.

The widow, however, last year consulted me about a sore in the skin of her back, over the sacrum, which troubled her greatly. It spread slowly, and would not heal. Though it looked more like a patch of lupus than anything else, I strongly advised excision. This was eventually done in a thoroughly effectual manner by Mr. Barling, and up to the present there has been no recurrence. Microscopic examination of the growth leaves no doubt as to its nature, as it has the usual structure of epithelioma. It will be noted that these three persons were not relations. Nor were any of the remaining six cases akin. In no one of the nine was there a family history of malignant disease.

I will quote but two more instances of what I have called "cancer-houses." In one, a domestic servant suffered from cancer of the breast. Many years after, a gentleman who had long lived in the same house died of cancer of the bladder. In the other, an elderly man died eighteen years ago from cancer of the rectum. He was at one time under the care of Mr. Furneaux Jordan, who confirmed the diagnosis already made of malignant disease. Eight years ago his wife also died of cancer of the rectum. She had continued to reside in the same house.

These brief notes, hastily set down, may yet serve to draw attention to what I believe to be an important subject for further enquiry. A research demanding neither laboratory nor expensive instruments does not very often present itself in these days; yet here is one. And if a goodly number of general practitioners in the country will carefully record every instance known to them in which a series of cancer cases has been attended in any house, and also every case suspected to have originated by contact with the disease, there will be accumulated in a few years a mass of information of the greatest value. Indeed it may be that only thus can the truth be ascertained in this matter. Hospital surgeons and operators, who see a great number of cases of malignant disease, complain that they lose sight of the patient when once he has returned to his home, often in a remote country place. His further history, after the operation or consultation, is a blank. Was he cured, or did the growth return? Is he alive or dead? Have any of his family developed the fatal malady? Who shall say, unless it is the family medical attendant, who has probably lived many years in the village and knows personally every inhabitant? It is therefore to the country doctor that we must look, if this gap in our knowledge of the natural history of cancer is to be filled up. Happy he who can help us, even a little, to a better understanding of the real nature of this the most dreaded of all the "*mille mali species*."

NOTES ON THE AFTER-TREATMENT OF CASES OF ABDOMINAL SECTION.

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NEXT to the skilful performance of the operation, the most important factor in securing the patient's recovery is the correct management of the case after the operation, and the prompt and judicious treatment of the various complications that may arise.

With the operation itself I am not now concerned; but I propose to indicate the lines on which the after-treatment should be conducted. Other methods there are, but I shall not refer to them, believing as I do that the following is the best.

With certain exceptions, the after-treatment of all cases in which the peritoneal cavity has been opened is practically the same. In some cases, especially enterectomies and hysterectomies, there are important deviations from the routine treatment. But these exceptions are few in number, and do not affect the general principles.

Most abdominal surgeons insist on the operation being performed, whenever possible, in a special hospital—public or private—where the after-treatment is conducted by the surgeon himself and his own trained nurses. But this is not always feasible; and not infrequently the surgeon is obliged to operate at the patient's own home, situated it may be in the heart of Wales or in some out-of-the-world village in Devonshire. The operation safely over the surgeon departs; and the after-treatment of the case is left in the hands of the family attendant, who perhaps has never before seen an abdominal section, and who has the vaguest notions of the complications that may arise. To such an one the following notes may be of service.

There are several matters which the medical attendant is expected to attend to before the arrival of the surgeon; and as these have an important bearing on the after progress of the case I shall now briefly allude to them.

The Nurse.—Most abdominal surgeons have their own staff of nurses specially trained by them; and they wisely insist, wherever it is possible, on one of these taking charge. In other cases the family attendant has to engage a nurse before-hand. He should choose, if possible, one who has had some previous experience of abdominal surgery. In addition to having a full knowledge of her profession, she must be young and robust, quiet and quick in her movements, firm and yet kind, scrupulously clean in her person and work, and above all, implicitly obedient to instructions.

The Room.—A suitable bedroom must be selected for the operation. It should be remembered that the patient and nurse after the operation will have to share the same room; so two beds should be provided. The bed chosen for the patient's use must be small and narrow, to facilitate moving her, dressing her wound, and giving her the bed-pan. It must be provided with a firm hair mattress—a feather bed is an abomination. The room must be large, well ventilated, heated preferably by a gas fire, and situated in the quietest part of the house. There must be a good morning light. There must be no suspicion of bad drains in or near the house. But although the operation has to be performed in the patient's bedroom, care must be taken that she is not horrified by the needless introduction of the operating table or an array of surgical instruments. These must be all arranged outside the room, and not brought in until the patient is anæsthetised.

Preparation for the Operation.—On the previous evening an aperient should be given, and on the morning of the operation the lower bowel emptied by means of a simple soap enema. For twelve hours before the operation no food must be taken. When not otherwise contra-indicated she should have a hot bath the night before, and in all cases on the morning of the operation the skin of the abdomen must be thoroughly cleansed with turpentine followed by the free use of soap and hot water. At the same time the nurse should wash out the vagina. The surgeon brings his own instruments, sponges, and dressings. The medical attendant, however, must provide or rig up an extempore operating table. A narrow kitchen table answers very well, or two dressing tables, placed one at right angles to the other (in the form of a letter T) may be used. At the Hospital for Women, and also in Mr. Lawson Tait's private hospital, a simple board supported on two tressels is found to answer all purposes; it is of the simplest possible construction, is easily kept clean, and is readily moved from room to room. It is to be covered with a folded blanket and over this a sheet of mackintosh. He must also see that there is a copious supply of hot and cold clean water, plenty of basins and towels, and half a dozen hot water bottles.

The patient must have on her stockings, her night-dress, and a warm bed-jacket. All being ready, the catheter is passed (and it must be absolutely certain that there is an empty bladder), the patient's denture is removed, and the anæsthetic commenced. She must be anæsthetised in her bed—not on the operating table. For the great majority of cases the best anæsthetic is a mixture of two parts of ether and one of chloroform given with Clover's inhaler. But for patients who are under fifteen or over fifty, or who have renal disease, or who are bronchitic, pure chloroform administered on a towel is preferable. The bronchitis which ether is apt to cause is a serious complication after an abdominal section, and the suspension of the functions of the kidney involved in its use renders it dangerous in renal surgery. Mr. Lawson Tait pointed out years ago that, in the human being at any rate, ether stops the secretion of urine during the period of anæsthesia. Chloroform on the other hand has no such baneful action.

The Operation.—As soon as the patient is unconscious, the operating table, the trays of instruments, the basins, and sponges, are brought into the room and arranged as the surgeon desires. The patient is lifted on to the table, her legs and hands secured to it with straps, her chest and legs covered with blankets and the operation proceeded with. During the operation the patient's bed must be made warm for her return by means of a row of hot-water bottles wrapped in a folded blanket. The operation over, the patient is made clean and dry, and the wound dressed. She should then be got back to bed as speedily as possible. The hot water bottles are to be moved aside, and the patient wrapped in the warmed blanket. The hot bottles are then packed around her outside the blanket. Before she awakes, the operating table, the instruments, and all the dread paraphernalia of the surgeon must be removed, and the room restored to its wonted aspect.

And now the *after-treatment* proper begins. For at least five days she must be absolutely secluded from all her friends, no one save the nurse and medical attendant being allowed to enter the room. Unless this rule be rigidly enforced, there will be endless annoyance and interference. Indeed the friends always give far more trouble than does the patient herself.

TREATMENT OF A SIMPLE CASE.

Let us suppose that the case is an uncomplicated ovariotomy, that the patient is young and strong, that the tumour was non-adherent and had an excellent pedicle and that no drainage tube was required. The less such a case is interfered with the better.

The dressings—These should be of the simplest character. The wound is carefully dried, and may be dusted with a little powdered boric acid. A pad of absorbent ('Gamgee') tissue is laid over the wound, and secured with two strips of sticking plaster. Over all an abdominal binder is pinned. The pad is changed as soon as it becomes soiled. Such a dressing is all that is necessary until about the sixth day, when the stitches should be removed. After this the wound may be dressed with zinc ointment spread on a strip of lint.

The Bladder.—The nurse must take care that the bladder does not become over distended. Should the patient be unable to pass her water—and such retention is frequent during the first forty-eight hours—the catheter must be passed about every six hours. The instrument must be scrupulously clean, and must be kept always under water when not in use, otherwise, the patient may develope a most troublesome cystitis.

The management of the bowels.—In the majority of cases during the first few days after an abdominal section an unusual amount of gas seems to be formed in the intestinal canal. In most cases this is passed freely per rectum and no tympanitis results. The nurse should assist the passage of flatus by means of a "flatus tube." The best of these resembles a glass test tube, curved slightly so to slip easily into the rectum, rounded at the end, and with a large hole on one side half an inch from the end. The tube is oiled and gently passed into the rectum, and the accumulated flatus escapes often in surprising quantities. If the patient goes on well and has no distension, no interference with the bowels is necessary until the evening of the fourth day. If they have not by this time moved spontaneously, a mild saline aperient should be given. Each morning after this an action of the bowels should be secured by means of a simple soap or glycerine enema.

The diet.—This is most important. For forty-eight hours after the operation she must be starved, and not allowed to swallow even a spoonful of water. She suffers cruelly from thirst; but I am convinced that this forced abstinence from fluids is very beneficial. The medical attendant must not give way to the patient's appeals. Her thirst may, however, be mitigated by allowing her to occasionally rinse out her mouth with warm water. On the morning of the third day—*i.e.*, forty-eight hours after the operation—half a tumbler of milk with an ounce of lime water may be given, to be taken in sips. At mid-day, a second half-tumbler is allowed. During the afternoon she may have some very weak tea with milk and a little dry toast. In the evening a small basin of gruel or arrowroot is given, and a tumbler of milk may be drunk during the night. On the fourth day she may have, in addition to the above, tea and toast for breakfast, a basin of beef tea or chicken broth during the forenoon, and a little milk pudding about one p.m. On the fifth day fish may be given for dinner; on the sixth day, chicken; on the seventh day, meat; and on the eighth day, fruit and vegetables. Such a dietary is only to be adhered to in straightforward cases that recover without a complication.

The Case Book.—The nurse should be provided with a "case book" in which she must keep a record of the progress of the patient's symptoms. For the first twelve hours after the operation the pulse and temperature should be taken every two hours; after this every four hours until the third day, and thereafter every eight hours. She must enter each particular at the time of its occurrence and never trust to memory. She must, moreover, keep a detailed record of the patient's diet, the administration of drugs or enemata, the passage of flatus, the movements of the bowels, the passage of urine, the presence or absence of distension, the occurrence of retching or vomiting and the character of the vomited matter, and the onset of any untoward symptom, such as severe pain, rigors, restlessness, or delirium. Should the patient begin to menstruate, the time of its onset, the amount of loss, and the time of its cessation must be noted. In cases where a drainage tube is used the nurse must record each drainage of the tube, the amount and character of the fluid removed, and the time when the tube is changed or finally dispensed with. She must also note the removal of the stitches, and the time when the patient is allowed for the first time to get out of bed.

The Abdominal Belt.—As soon as it is clear that the patient is out of danger—usually about the end of the first week—she must be measured for an abdominal belt. This is specially constructed to support the line of the incision and prevent the formation of a ventral hernia. It must each day be applied before she is allowed to sit up in bed. It is advisable for her to have a light belt for night wear, and a strong one for use by day.

Sitting up.—If the wound be soundly healed and the patient has recovered without a complication, she may sit up in bed for an hour on the fourteenth day, and get out of bed for an hour on the fifteenth day. By about the twenty-first day she will be able to go out for a drive, or even to leave home.

Final Instructions to the Patient.—She must be advised as to the regulation of her diet and the management of her bowels—taking if necessary some mild aperient, such as compound liquorice powder. She must be warned to avoid all muscular exertion, such as lifting heavy weights or running up-stairs. For three months at least the marital relations must be suspended. Most important of all, she must be urged to continue the use of the belt for two years after the operation.

(To be continued.)

PERISCOPE.

PHYSIOLOGICAL & PATHOLOGICAL CHEMISTRY.

BY C. A. MAC MUNN, M.A., M.D.

Influence of Acids and Alkalis on the Alkalinity of Human Blood, and on the Reaction of the Urine.—A. Freudberg (*Virchow's Archiv*, cxxv., 566 to 600), has investigated the subject. The method of Von Jaksch with a slight modification was used in estimating the alkalinity of the blood, viz.: by titrating small quantities with very dilute tartaric acid. Bohr has shewn that estimation of the carbonic anhydride does not lead to a correct estimate of the alkalinity. The degree of acidity or of alkalinity of the urine was estimated by titration, in the former case with normal soda solution, in the latter, with normal oxalic acid. A great number of observations were made on the blood and urine of patients suffering from various morbid conditions, the results of which are given in a tabular form. The following conclusions are drawn:—Hydrochloric acid (4 to 8 grs. of the officinal acid per diem) does not alter the alkalinity of the blood, only one exception having occurred. But it increases the acidity of the urine always. Lactic acid (10 to 30 grs.) lessens the alkalinity of the blood by one-fifth to one-fourth. The acidity of the urine is however not markedly increased by its use, and not in proportion to the amount of acid given, which is no doubt to a large extent oxidised in the body. Tartaric acid (5 to 10 grs.) lessens the alkalinity of the blood by one-sixth, and increases the acidity of the urine, but not markedly. It is also burnt to a great extent in the body. Bicarbonate of sodium (5 to 15 grs) in three cases increased the alkalinity of the blood by one-fourth; while in two other cases it produced no change. In all cases it caused marked alkalinity of the urine.

Therapeutic and Physiological effects of Ozone.—Labbe and Oudin (*Compt. rend.*, cxiii., 141 to 144) maintain that ozonised air containing from 0·011 to 0·012 milligrams per litre of ozone, prepared by a special apparatus designed by them, can be breathed by young children without injurious effect, that when inhaled sufficiently by anæmic subjects it increases the amount of hæmoglobin in the blood rapidly, and that cultivations of tubercle bacilli on peptonised gelatin are sterilized by ozonised air.

Production of Urea in the Organism.—Popoff (*Bull. Soc. Chem.* [3] v., 551 to 554), in order to determine whether the transformation of ammonium salts into urea is effected by an unorganised ferment or by the living cell, removed portions of the liver, spleen, and kidney from recently-killed dogs and guineapigs, and digested them, with antiseptic precautions, for several hours with warm dilute (0·5 to 1·0 per cent.) sterilised solutions of various ammonium salts. In no case was urea found, therefore it is inferred that the formation of urea from ammonium salts is due to the direct action of the living cells of the different organs, and not to that of soluble ferments formed in them.

Is Alcohol eliminated by the Milk ? — F. Klingemann (*Virchow's Archiv*, cxxvi., 72 to 80) administered fairly large doses of alcohol to nursing women, but could never find any in their milk. In animals in which larger doses were given proportionately, he found traces occasionally.

Creatinine not increased by Muscular Exertion.—J. Moitessier (*Comp. rend. Soc. Biol.*, 1891, 573 to 574) finds that muscular exercise (walking) does not increase the output of creatinine in the urine.

Excretion of Uric Acid, Urea, and Ammonia.—Herringham and Davies (*Journ. Physiol.*, xii., 475 to 477 and 478 to 484) criticise Haig's statement that the proportion of uric acid to urea varies inversely with the daily total acidity of the urine. They attribute the results obtained by Haig to his using Haycraft's method, while they use "Ludwig's modification of Salkowski's process" for the estimation of the uric acid, and the hypobromite method for that of the urea. They find that the proportion of uric acid to urea bears no fixed relation to the total acidity of the urine. They further find that uric acid may be passed to one-twenty-fourth of the weight of the urea without bad results.

Cyanmethæmoglobin and Detection of Hydrocyanic Acid.—R. Kobert (*Chem. Centr.*, 1891, ii., 591, from *Apoth. Zeit.*, vi., 386) states that hydrocyanic acid forms with methæmoglobin a red compound-cyanomethæmoglobin, which differs from oxyhæmoglobin and its modifications in that its spectrum possesses no special absorption band. The bright red colour of the blood in cases of poisoning by prussic acid in places where the formation of methæmoglobin has occurred, is due to the formation of the cyanogen compound. The cyanogen compound in blood he directs to be detected in this way:—1 cc. of blood is diluted with 99 cc. of water and a 1 per cent. solution of potassium ferricyanide added drop by drop. If cyanogen is absent, the colour of the solution passes from red to yellow, owing to the formation of methæmoglobin, the spectrum of which can then be observed; but in the presence of cyanogen the colour becomes a brighter red, and the solution shews no absorption band. Hydrocyanic acid may be detected by this test. Healthy blood is used, diluting it to the extent stated; a small crystal of potassium ferricyanide being added, the solution is shaken until the red colour has just changed to yellow, and a little of the liquid under examination poured on the surface. In the presence of hydrocyanic acid a bright red colouration takes place. The solution must be feebly acid, not alkaline. If blood contain cyanogen, a 1 per cent. solution retains its colour for some time, whereas normal blood becomes darker at the end of a few hours or days, and shews the spectrum of reduced hæmoglobin.

Specific Gravity of the Blood of Europeans living in the Tropics.—M. Glogner (*Virchow's Archiv*, cxxvi., 109 to 113) estimated the sp. gr. of the blood by means of Hammerschlag's method. A drop of blood is placed in a mixture of benzene and chloroform, and then benzene or alcohol is added until the drop of blood swims. The mixture is filtered through linen, and its specific gravity, taken by means of the hydrometer, gives that of the blood. In twenty persons (Europeans) who had lived in the East Indian islands, and who were suffering from "tropical anæmia," the number of red corpuscles was found normal, but the sp. gr. was found to be 1·053 instead of the normal 1·062. Hence it is inferred that this disease is due to loss of the constituents dissolved in the blood plasma, probably proteids.

C. Eijkman (*Virchow's Archiv*, cxxvi., 113 to 124) has made similar but more extensive observations. He took the sp. gr. of the blood by means of Schmaltz's capillary pycnometer (*Arch. klin. Med.*, 1890), counted the corpuscles and estimated the hæmoglobin by means of von Fleischl's hæmometer. Malays and Europeans were examined. The blood throughout gave practically the same number of corpuscles, and the same percentage of hæmoglobin. The sp. gr. was found to be 1·057, according to Schmaltz only ·002 too small, as he puts the normal at 1·059.

Excretion of Nitrogen in Renal Disease. — H. Kornblum (*Virchow's Archiv*, cxxvii. 409–445) after a series of very complete observations, in which the quantity and specific gravity of the urine, and the quantity of the nitrogen and phosphoric acid were estimated in four cases of Bright's disease and compared with the normal, concludes that in nephritis, although nitrogenous metabolism is slow, there is no actual diminution in the output of nitrogen as compared with that ingested.

Formation of Uric Acid from Nucleïn.—Cf. *Birm. Med. Rev.*, 1891, p. 354.—Horbackzewski (*Sitz. k.k. Akad. d. Wiss Wien Mathem.-naturew. Cl.*, 1891, Abth. 3) has continued his investigations on this subject. He finds that uric acid is obtainable from any organ rich in nuclei; that uric acid is increased in the urine of animals after food, especially after food which like meat increases the number of leucocytes in the blood. Subcutaneous injection of nucleïn leads to a great increase of the uric acid excreted. This occurs in animals and men. In some diseases in man in which no increase of leucocytes occurs there is no rise in the output of uric acid.

Quinine produces a fall in the number of leucocytes and in the excretion of uric acid, so does atropine; whereas pilocarpine produces the opposite effect. Antipyrin and antifebrin increase the number of leucocytes, but diminish the excretion of uric acid, owing to the fact that leucocytes are not destroyed so rapidly. Examined with the microscope, the spleen and blood shewed an atrophic condition of the leucocytes after the use of quinine and atropine, whereas pilocarpine caused them to undergo karyokinetic changes. Whenever under pathological conditions there is leucocytosis or leucocythæmia there is an increase in the excretion of uric acid. It is finally concluded that the origin of uric acid from nucleïn is proved.

Formation of Oxy-hæmoglobin from Hæmatin and a Proteid.—H. Bertin Sans and J. Moitessier (*Compt. rend.*, cxiv., 923 to 926), have succeeded in reproducing what appears to be oxyhæmoglobin by combining hæmatin with a proteid obtained from the same blood. [This matter requires renewed investigation.]

Estimation of Uric Acid.—See H. C. Geelmuyden in *Zeits. Anal. Chemie*, xxxi., 158 to 180.

Hæmatoporphyrin in Urine.—Dr. A. E. Garrod has in a very thorough manner dealt with the excretion of hæmatoporphyrin in urine (*Journ. of Physiol.*, Vol. xiii., No. 6, 1892, and *Journ. of Pathol. and Bacteriology*, October, 1892). He has examined the urines of upwards of a hundred and fifty patients and healthy individuals for hæmatoporphyrin and allied pigments, and he finds that in some of its varieties it "is an extremely common urinary pigment, that it is usually present in extremely minute quantities, in the urine of healthy individuals, and that in a large number of morbid conditions considerable amounts are present, without materially affecting the colour of the urine." A new and simple method is described for its detection, which probably precipitates the hæmatoporphyrin in the form of a sodium compound (although Dr. Garrod does not say so).

[The occurrence of several cases of hæmatoporphyrinuria after the use of sulphonal has lately drawn renewed attention to this subject. The reporter first detected this body in urine in 1880 (*Proc. Roy. Soc.*, 1880, xxxi., p. 211), and since then cases have been reported where it has occurred by him and by Neusser, Le Nobel, Stockvis, Ranking and Pardington, V. Harley, Salkowski, Hammarsten, Halliburton, Jolles, and Sobernheim. Dr. Garrod proposes to change its name by leaving out the "uro" from the word urohæmatoporphyrin; but since the latter name was merely meant to express the fact that the pigment is found in urine, nothing could be gained by doing so. Moreover, there are weighty reasons for believing that it occurs in many cases as a *reduction product*—sometimes, indeed, as a *chromogen*—in urine. In fact it is found there *in various stages of reduction* in different cases, just as it is found in various stages when prepared artificially by the action of sodium amalgam, or zinc and sulphuric acid, on hæmatin, if the solution be examined from time to time as the reduction proceeds. Dr. Garrod has collected all the literature bearing on the subject in the papers referred to above.]

NERVOUS DISEASES.

BY DR. SUCKLING.

Massage in Megrim.—Dr. A. Simons Eccles (*Practitioner*, Sep., 1892) contributes an interesting and suggestive paper on the use of massage in megrim. He states that during and immediately after an attack the stomach is flaccid, inert, and atonic, that the stomach splash can readily be elicited, and that the stomach is dilated. He thinks also there is a condition of intestinal aperistalsis. In every case the period of gastro-intestinal inertia was synchronous with the severity of the headache, and was followed by the renewed activity of the gastro-intestinal muscular coats, and very often by retching, eructations, and vomiting. He suggests that irritation of the gastric periphery of the vagus is the excitory cause of the head-pains and other symptoms of nerve irritation accompanying the paroxysms. He suggests that the phenomena of megrim point to absorption of toxic matters from the stomach into the circulation, and that the occurrence of megrim is due to disordered digestion. He recommends rest in the recumbent position, massage of the abdomen, and general massage.

Anosmia apparently due to Gout.—Dr. Durant (*New York Med. Journal*) records the case of a lady who together with joint pains suffered from anosmia. Her father and brother were gouty. No lesion could be discovered in the nose. The patient recovered completely from the pains and anosmia in four months, being treated with icthyol internally and ointment of icthyol being applied to the painful joints.

The Pathological relations of Chorea. — Drs. Walton and Vickery (*Amer. Jour. Med. Sci.*, May, 1892) arrive at the following conclusions with respect to the relations of chorea to rheumatism and disease of the heart. 1. Neither rheumatism nor heart disease is essential to chorea. 2. Rheumatism predisposes to chorea and organic heart disease does also. 3. Fatal cases are generally associated with organic heart disease and probably with organic disease of the central nervous system, notably cerebral embolism. 4. There is a large class of functional cases, mainly reflex, and brought on by circumstances tending to produce functional symptoms in general.

Tabes Dorsalis with unusual Cranial Initial symptoms.—(*Le Progrès Méd.*, reported in *Practitioner*, Aug., 1892).—The conclusion arrived at by the School of the Salpêtrière is that the optic nerve is the most often affected, then the third and then the sixth, and that the other cranial nerves are not often touched. Dr. Chabbard, of Toulouse, records the case of a woman who suffered from severe paroxysms of pain in the left side of the face. After recurring daily for three months they disappeared, and it was then found that there was complete loss of sensation over the left side of the face and of the mucous membrane of the mouth. Then the left eye began to lose its visual power, and there was some paralysis of the sixth nerve on the left side. Later on, after a fit of passion, the upper lid was paralysed and all the muscles of the eye were paralysed.

Treatment of Graves' Disease.—(*Medical Record*, New York, Vol. xli., 1892).—A review of the modes of treatment with strophanthus and hydropathy is mentioned. At the Salpêtrière negative faradisation of the carotids, the goître, and the eyes, and positive of the præcordial region has been most successful.

Treatment of Tabes Dorsalis.—(Reported in *Practitioner*, July, 1892.)—Professor Leyden advises a mode of treatment which he calls the compensatory treatment. He advises nourishing food, exercises, and encouragement of the patient. The patient should not be kept in bed but should constantly exercise his muscles and try to overcome the incoördination.

A case of Progressive General Paralysis of very early commencement.—Charcot and Dutil have reported a case of the above, the symptoms of which appeared at the unusually early age of 14, and the further development of the affection leaves no doubt as to the correctness of the diagnosis. The writers think this juvenile variety presents some peculiarities distinguishing it from the ordinary or normal type. Occurring most often at the critical period of puberty, psychical troubles appear first and the arrest of physical development is one of the most marked features. The mental condition in the majority of cases is one of tranquil debility without excitement or ambitious delirium, and much resembles that occurring in the general paralysis of women. Its duration varies from two to five years. The chief factors in the ætiology are hereditary neuropathic predisposition and congenital syphilis.—*Archives de Neurologie*, March, 1892.

Paralytic obstruction of the intestine relieved by the constant current.—Semmola has reported the case of a man aged 20, of nervous temperament, in whom, after an attack of diarrhœa, symptoms of intestinal obstruction appeared with ischuria. Ordinary treatment proving futile, colotomy was proposed and a diagnosis of paralysis of the bowel was made. The constant current was recommended. The positive pole attached to a catheter was introduced into the rectum, and the negative pole stroked upon the abdomen in the course of the colon for from eight to ten minutes thrice daily. Cure complete in ten days.—*Internationale klin. Rundschau*, 1892, No 16.

Paralysis Agitans in a Young Man.—Quintard (*Bull. de la Soc. de Méd. d Angers*) has reported the case of a youth of sixteen who presented symptoms of paralysis agitans following exposure to cold two years previously. Tremor appeared in the right hand and continued for a month. Within two months the tremor reappeared, also extending to arm and shoulder, and the characteristic movements soon involved the lower extremity upon the same side.—*Journ. de Méd. et de Chir. Prat.*, 1892.

The Pathology of Paralysis Agitans.—Borgherini (*Rivist. sper. di Freniatria e di Med. Leg.* 1891) reported a case of paralysis agitans, in which after death, on careful microscopic examination an excessive formation of connective tissue was found in various parts of the cerebro-spinal nervous system, with pigmentation and atrophy of grey matter and ganglion cells. The walls of the capillaries were thickened, the lumen of the vessels was increased, and the peri-vascular lymph spaces were dilated. In many places miliary aneurisms were present. The lesions are thus those of senile involution.—*La Médecine Moderne*, 1891.

Association of Tabes with Saccharine Diabetes.—By Guinon and Souques (*Archives de Neurologie*, 1891, January and March, 1892). The following conclusions are drawn by these writers on this question of the relationship between tabes and diabetes:—1. There exist cases of association of true tabes with undoubted saccharine diabetes. 2. This association of tabes with diabetes in one and the same individual, as in one and the same family is not a fortuitous coincidence. It is the consequence of the intimate bond of relationship which unites the two great families, the arthritic and neuropatric in general, diabetes and ataxia in particular. 3. To establish the diagnosis of these cases of association and to separate them from diabetic pseudo-tabes, and from tabetic glycosuria with which they may be confounded, it is necessary to proceed in the following manner:—In case of an undoubted diabetic presenting tabetiform nervous signs, if the anti-diabetic treatment brings about an amendment of these nervous signs, along with improvement in the diabetes, pseudo-tabes may be affirmed; but if the contrary happen, the presumption is in favour of true tabes, and the existence of subsequent appearance of certain tabetic signs (inco-ordination, vesical ocular troubles) transforms this presumption into a certainty. In the case of an undoubted tabetic, on the other hand, whose urine contains sugar, if the glycosuria is accompanied by anæsthesia in the region of the trigeminal, by frequency of pulse, and laryngeal and respiratory crises, it is under the dependence of the progressive locomotor ataxia, but if these concomitant signs are wanting, the probabilities are strongly in favour of the diabetic origin of the glycosuria.—*The Medical and Surgical Reporter*, Sept., 1892.

REPORTS OF SOCIETIES.

British Medical Association.

Birmingham and Midland Counties Branch.

Meeting, Thursday, Nov. 20th, 1892, Dr. Holmes Joy, President.

Gastro-enterostomy by Senn's method.—Mr. Bennett May shewed a patient upon whom he had operated a month previously, performing Gastro-enterostomy by Senn's method. The patient was probably suffering from malignant disease of the pylorus, but he had made an excellent recovery from the operation, and was gaining weight rapidly.

Mr. Blakeney shewed a man with hard irregular thickenings over the ischial tuberosities, which he believed were due to deposits of uric acid from the characters of some of the material which had found its way out through the skin.

Trephining for Epileptic Seizures.—Mr. Barling shewed a young man whom he had trephined for epileptic seizures due to tubercular necrosis of the cranial bones. The starting point of the fits was the left motor area, and after removal of bone here a large collection of caseous material was found between the dura mater and the bone. Since the operation the patient had been much better, and no fit had occurred for the last two months, whereas, they used to be frequent in occurrence, sometimes many in one day.

Ovarian Cyst.—Mr. Langley Browne shewed a specimen of multilocular ovarian cyst associated with a twisted pedicle and intra-peritoneal hæmorrhage from the bursting of a vein in the pedicle. The patient was making a good recovery.

Gall-stones.—Mr. Jones, of Coleshill, shewed three gall-stones from an aged woman. They had been extruded through a sinus in the abdominal wall.

Removal of Tongue.—Mr. Haslam shewed a man, aged 56, whose tongue he had removed three weeks ago, the method adopted being that of ligature of both lingual arteries in the neck and excision with scissors. The patient was encouraged to sit up in bed as soon as he recovered from the anæsthetic, and got up on the second day; the mouth was constantly irrigated with a carbolic solution, and the diet was liberal. Attention was drawn to the importance of these points in the after treatment.

Sac from radical cure of Hernia.—Mr. Jordan Lloyd shewed the sac of a gigantic hernia removed in the operation of radical cure. The spermatic cord and the testis were removed at the same time, and the patient made a good recovery.

Paper.—Dr. Carter read a paper on Chorea.

PATHOLOGICAL AND CLINICAL SECTION.

Friday, October 28th, 1892.

ROBERT SAUNDBY, M.D. Edin., F.R.C.P. Lond., in the Chair.

Ataxic Arthropathy.—Dr. Carter shewed a patient suffering from swelling of the hip-joint, which had developed under the following circumstances:—The patient, aged 50, had suffered from "lightning pains" in the legs (especially the right) for some few months past. About six weeks ago the right hip suddenly began to swell, the swelling at first involving the whole thigh Latterly the lower part of the swelling has much diminished, but there is still much diffuse enlargement of the upper part of the thigh. Concurrently he has become progressively lame, the limb has shortened by an inch and a half, and loud grating on movement has developed in the right hip and knee-joints. As to nervous symptoms, the lightning pains have increased, the pupils exhibit the Argyle-Robertson phenomenon, the knee-jerks are absent, and marked unsteadiness on standing with feet close together and eyes shut. There is no optic atrophy, no loss of sensation, no loss of muscular sense, and no ataxy on walking. Family history unimportant. No personal history of syphilis.

Ophthalmoplegia with general motor paresis in young women.—Dr. Suckling shewed a woman, aged 21, who had been ill for nearly three years with extreme general weakness. She first noticed the weakness in her shoulders, being unable to raise her hands to her head. In a little time she noticed her legs weak, and she used to fall in the street and was quite unable to get up again without assistance. Later on, she found that she saw double and was giddy at times. A year ago she lost the use of her tongue, and became speechless for a short time after singing. A few months ago she found difficulty in swallowing, and at times liquids came down the nose on attempting to swallow. At the present time she is extremely weak; when lying down she cannot rise without assistance, and cannot get up from the sitting position except by placing her hands on the chair. When standing, there is well marked lordosis, which gives place to a marked general convexity of the spine on sitting down. The head falls forward, and she has much difficulty in holding it up, feeling it to be very heavy. The gait, lordosis, and mode of rising are suggestive of pseudo-hypertrophic paralysis; but the muscles, though well developed, are not enlarged, nor is there any atrophy. The paresis is especially marked in the shoulder muscles, for she cannot hold out her arm or place her hand on her head. The muscles respond normally to faradism. The hands and feet are blue and cold, but there is no disturbance of sensation anywhere. The movements of the soft palate are normal and the palatal reflex present. She has had several suffocative attacks, suggestive of weakness of the abductor muscles of the glottis, but she cannot bear any examination of the throat even after the application of cocain. During these attacks she says she makes a noise like a child in croup. There is at present no stridor and no aphonia. Speech is at times indistinct, and the tongue feels heavy and weak. Mastication is also feeble, and food collects between the gums and the cheeks. There is considerable ptosis on both sides, which varies in amount, being worse when she is tired. The range of movement of the eyes is deficient in all directions, but especially upwards and to the right. Nystagmus is present when the eyes are directed to either side. Diplopia is present at times. The field of vision is normal when the eyelids are raised, and the fundus oculi is normal. The pupils are equal, of normal size, and respond sluggishly to light, but not to accommodation. On attempting to accommodate for near objects, nystagmus occurs. There is no sign or history of syphilis, diphtheria, or rheumatism. The urine is healthy; defecation and micturition are unaffected. The reflexes, including the knee and plantar reflexes, are normal, and there is no ankle clonus. There is a marked neuropathic family history, a sister having been paralysed, and a brother is epileptic. The exciting cause seems to have been excess of physical work, for from the age of 15 up to the onset of her illness she served behind a bar for many hours daily. Dr. Suckling did not consider the case to be one of hysteria, but to be probably of the nature of an exhaustion paralysis, the motor nerve cells of the ocular nerves, of the fifth, spinal accessory, hypoglossal, and anterior cornua of the cord being exhausted. He related another case of the same kind, and suggested that they might prove to be a distinct type of disease.

Fibroid Lung.—Dr. Foxwell shewed the lung of a matchet (bill-hook) grinder who had died of acute pneumonia. For two years before his death he had suffered from cough, expectoration, night sweats, anorexia, and emaciation. On June 27th he had dry pleurisy and became unable to work. On July 13th he was seized with an unusually bad fit of coughing and grew much worse afterwards. He was admitted to the Queen's Hospital on July 16th with much dyspnœa, some lividity, and short, shallow respirations, 54 to the minute. The breathing was chiefly abdominal with retraction of the lower spaces during inspiration. The heart's action was rapid and feeble, with a pulmonary murmur and right-sided dilatation. His sputum contained much viscid mucus and frothy fluid; it was of a dirty brown colour but not rusty. On examination there were all the signs of pneumonic consolidation of the upper two-thirds of the right lung except that the breath-sounds though bronchial were feeble, and that the chest wall was retracted rather than expanded. Below were signs of collapse and, on the left side, of acute congestion. The apex of the left lung gave the same signs as the upper part fo the right, only the vocal resonance was not increased.

Post mortem the whole of the upper and half the lower lobe of the right lung were in a condition of acute fibrinous pneumonia. In addition to this the same area of lung had much dense interstitial fibrosis uniformly distributed ; the fibrous tissue occupying more space than the deeply pigmented parenchyma. There were two small cavities (full of fluid) and a pea-sized caseous nodule at the apex. The apex of the left lung had a similar cavity. No bacilli were found in two or three sections of lung examined.

The points of interest were (1) the supervention of a widely-spread acute lobar pleuro-pneumonia in a chronic case of fibroid phthisis ; (2) the feeble quantity of breath-sound and of vocal resonance, with want of expansion of the chest, which enabled one to separate it from a case of pneumonia pure and simple, though the history at first given of a sudden access of illness on July 13th led one to expect this ; (3) the apparent absence of bacilli ; (4) the effect of occupation—two of his brothers who were also grinders having died of lung disease before they were 50, a third brother (a painter) being alive and healthy.

Hypertrophied Synovial Fringe removed from Knee-joint.—Mr. Barling shewed a greatly hypertrophied synovial fringe removed from the knee-joint of a middle-aged woman, in whom it had produced Hey's internal derangement. The body appeared to have developed from the inner alar ligament, and was attached by a fine pedicle, as were two smaller bodies also removed. At the time of operation there was a good deal of blood-stained fluid in the joint. A good recovery followed with a freely movable knee.

Infarction in Kidney.—Mr. Marsh shewed a kidney taken *post mortem* from a man æt. 65, who was admitted into Queen's Hospital with phlegmonous peri-proctitis. Nearly the whole of the cortical part of the left kidney was studded with irregular areas of infarction. The pelvis and ureter were healthy, as was also the right kidney. The heart was greatly dilated, and the muscular tissue soft and friable. There was no other pathological condition except the local one, which was limited to the lower half of the rectum.

MIDLAND MEDICAL SOCIETY.

The second ordinary meeting of this society was held on Wednesday evening, November 16th, Mr. EALES, President, in the chair.

Papilloma removed from the Larynx.—Mr. Marsh shewed a papilloma removed from the larynx of a patient, and the patient herself. There had been a history of some laryngeal trouble for eighteen months; never any dyspnœa or pain. On examination, a small papilloma was seen on the free edge of the left vocal cord, about its centre, and a group of three or four smaller ones at the anterior commissure. They were incised with a laryngeal knife, and removed with Mackenzie's forceps. The patient's voice at once returned, and has remained well since. A very small papillary growth has since recurred on the anterior commissure.

Dropped Foot.—Dr. Suckling read notes of two cases of dropped foot from sciatic neuritis. The first was a woman, aged 66, who had had trouble for six months, attributed to sciatica, and had lately lost the power of raising the toes. The external popliteal nerve was thickened and tender. The plantar reflex was absent on the affected side.

The second case was that of a man, aged 60, who suffered from pain in the course of his sciatic and peroneal nerves. In this case, during paroxysms of pain, all power of dorsal flexion of the foot would be absent.

Dr. Suckling called attention to the great preponderance of left-sided sciatica over right-sided sciatica, and suggested that a loaded rectum might possibly be a predisposing cause of the neuritis. Nearly all cases of sciatica were, in his opinion, in greater or less degree due to a neuritis. He also spoke of temporary dropping of the foot after paroxysms of pain in locomotor ataxy, and of dropped foot in phthisis.

Annular Carcinoma of the Sigmoid flexure.—Mr. Jordan Lloyd shewed a specimen of annular carcinoma of the sigmoid flexure removed by operation from a woman 62 years of age, suffering from acute symptoms of intestinal obstruction. The lumen of the bowel was contracted to the size of a crow quill, but the patient had not complained of abdominal symptoms until a few days before the operation.

Cancer of the Liver.—Mr. Lloyd also shewed a life-size drawing of a primary multinodular cancer of the liver removed *post-mortem* from the body of a woman, 42 years of age. The specimen was shewn because of the enormous size of the organ, which weighed 15 lbs. 12 ozs.

Heart.—Dr. Foxwell shewed a heart taken from the body of a girl of 17, in which there was a communication between the auricles. The opening into the right auricle was some quarter of an inch in diameter; that into the left auricle very little more than one-sixteenth, and situated much higher up in the wall of the septum, so that a valvular passage existed between them, which, it seemed, must be closed, or nearly so, during the auricular systole. The pericardium was almost universally adherent; where it was not, its layers were separated by caseous material; where adherent its layers were largely infiltrated with calcareous matter, which in places was one-eighth of an inch in thickness, and was very dense and continuous forming a rigid shell to the heart. The history was one of good health and strength, though always short-winded on exertion, up to 14; since then increasing failure with symptoms of "bronchitis." No acute rheumatism nor scarlet fever.

Diseased Kidney.—Mr. Taylor shewed three specimens of diseased kidney removed by nephrectomy.

1. A large pyonephrosis, removed by the abdominal method, the patient making a good recovery.

2. A carcinoma of the right kidney, removed through a lumbar incision. Recurrence had taken place within three months.

3. A case of hydronephrosis, operated on successfully through the abdomen.

Paper.—Mr. Barling then read a paper on "Appendicitis."

QUEEN'S COLLEGE MEDICAL SOCIETY.

At a meeting of the Queen's College Medical Society, held at Mason College on October 26th, Dr. WILLIAM RICHARDS (President) in the chair,

Dr. Short shewed a living case illustrating the value to be derived from massage in chronically stiff joints.

Dr. Melson discussed the case, and observed that as soon as the massage was discontinued, the original condition, as a rule, returned.

In Mr. Charles Martin's absence, Mr. Christopher Martin shewed a specimen illustrating the growth of the placenta after the death of the fœtus.

Mr. W. F. M. Ward shewed a specimen and microscopic slides of simple annular stricture.

Mr. Dryden Stead shewed a tubercular kidney and a gall stone which weighed 309 grs.

Dr. Short read a paper entitled "Some Points in the Dietetic Treatment of Gout and Kindred Conditions," which was published in the November number of the *Birmingham Medical Review.*

In the discussion that followed the reading of Dr. Short's paper, the President, Dr. W. Richards, referred to the great difficulty that always presented itself in any attempt to treat the poor by changes in their diet. He thought that Abernethy's dictum—"Live on sixpence a day, and earn it"—was perhaps the best cure for gout that was known. The actual wine and spirit prescribed, he agreed, should differ with the kind of case, and asked why soda water and brandy were generally considered harmful to gouty patients.

Dr. Suckling said that he had quite agreed with all that had been said as to the great importance of arranging an individual diet for each case under treatment, and strongly deprecated any routine method, such as the wholesale use of printed diet-forms for different patients whose cases were not really the same in nature. He also drew attention to the diagnostic value of "twinges" in the big toe, even when other symptoms of gout appeared to be absent, and particularly emphasised the sentence in the paper which advised the discontinuance of all alcoholic liquors by gouty people, especially by young ones.

Dr. Purslow demurred to some extent to the absolute value of pain in the big toe as a sign of gout, and in illustration of his doubt, he mentioned a case that had lately come under his notice.

Dr. Melson considered that too little pure water was drunk by nearly all people as a rule. He was of opinion that no other non-alcoholic drink could be considered as a satisfactory substitute. He had read that common salt was likely to produce gout if taken in excess, and hoped to hear an expression of opinion on this point.

Dr. Fitzpatrick said that he had noticed that gout was much less in evidence in warm than in cold climates, and thought that climatic treatment was a valuable adjunct to that by a change of diet.

Dr. Short, in replying, said that the change in diet in poor patients was usually one tending to the improvement of its nutritive quality as a preventative against atonic gout. If this could not be carried out, as indeed so generally occurred in out-patient work, beyond the increase in the amount of fluid taken, no other change could be made in patients who existed mainly on tea and bread and butter. He pointed out that soda was prohibited with the idea of lessening the base with which the uric was combined when deposited. In the case of common salt this might be useful if the amount were not diminished sufficiently to cause dyspepsia by its absence. If an aerated water were simply impregnated with carbonic acid gas by means of the action of an acid, such as tartaric acid, on a soda salt, there would be no soda at all in the water, and no objection could be taken to it on that score. Brandy was considered injurious on account of the colouring matter said to be produced by the presence of burnt saccharine substances, as in the case of stout and porter, a question already referred to in the paper. In conclusion, Dr. Short expressed himself as very gratified, not only with the reception that his paper had met with, but especially with the capital discussion that had followed it.

A meeting of this Society was held in the Professors' Common Room at Mason College, on Nov. 9th, Dr. W. Richards in the chair, and 56 members present.

Mr. J. J. G. Whittindale was down to read a paper entitled "Medical Notes from West Africa," but was too ill to attend. The President read his paper, which was of great interest, and may be published later.

Mr. Sydney Pritchett shewed a living case of Charcot's disease in a man, aged 50. The disease was situated in the right hip-joint, and there were well-marked signs of locomotor ataxia present. The joint affection came on quite suddenly with painless effusion about twelve weeks ago, and is now chiefly remarkable for the extremely marked grating to be found on movement. The same grating, in a smaller degree, was present in the right knee.

In answer to questions from Mr. Geo. Heaton, Mr. Pritchett said there was no history of syphilis and that he did not know of any treatment likely to benefit the joint condition.

Dr. Short shewed a case of Myxœdema, aged 57. The patient was a woman who had suffered for two years from the characteristic signs of this disease, the most curious being the extraordinary alteration in the woman's features. The case shews well the following points:—The yellow œdematous skin, the expressionless face, swollen eyelids and lips and broadened nose, with red patches on the cheeks. The nasty taste and unpleasant subjective smell. The monotonous voice. Hair harsh and dry, with dryness of the whole skin of the body. Mental apathy with the characteristic slow muscular movements. Her urine was of low sp. gr., and the amount of urea passed in twenty-four hours was approximately 180 grs. during the first week of November. A trace of albumen had been present throughout. The thyroid could not be felt.

Dr. Short also read the notes of another case of myxœdema, which should have been shewn, but failed to present herself. In this case the woman was aged 40, and although she had suffered from the disease for two years, her case was not so advanced as the previous one. Most of the characteristic symptoms were well-marked in this case. The urine was of low sp. gr., and the urea estimated during one week in October shewed an approximate average of 90 grs. in the twenty-four hours.

The President said he considered the cases were both undoubtedly suffering from myxœdema, and hoped that at some future time the second case would be shewn.

Dr Melson asked what treatment was being carried out, and referred to the injection of extract of thyroid gland and the feeding of myxœdematous patients with fresh glands.

Dr. W. R. Jordan discussed the cases, and said he thought the swellings were due to accumulation of fat.

Dr. Short in replying, said he would shew the recalcitrant case at the earliest opportunity. Both cases had been taking Jaborandi; one declared herself much better, but in the other case there did not seem much real improvement. He hoped to place both patients under the thyroid treatment, and would let the Society know the results.

Unilateral Hypertrophy of the Mammary Gland.—Mr. J. F. Jordan shewed a case of unilateral hypertrophy of the mammary gland in a youth, aged 23.

REVIEWS.

CANCER OF THE MOUTH, TONGUE, AND ŒSOPHAGUS.*

This book, which is based on the author's experience as surgeon to the Brompton Cancer Hospital, is a useful addition to our literature on malignant disease of the mouth.

Cancer of the lip is first described, and an early operation advised. Several useful plastic operations are given in detail for use when the disease is extensive and much tissue has to be removed.

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* Cancer of the Mouth, Tongue, and Œsophagus. By F. Bowreman Jessett, F.R.C.S. Baillière, Tindall, and Cox. 1892.

In the chapter on tumours of the upper jaw, such innocent growths as fibroma, enchondroma, are included, though they can scarcely be said to come under the head of malignant tumours. They are introduced apparently in order to contrast them with the malignant ones.

The clinical account of these growths is scarcely so full as we could have wished; their pathology is, however, full and accurate. We are glad to find that such mutilating and dangerous operations as total removal of both superior maxillæ are decried.

Tumours of the lower jaw are next described. The account, though accurate as far as it goes, can scarcely be said to be complete whilst no mention is made of the interesting "boring epitheliomata" of Mr. Eve.

The chapter on cancer of the tongue is full and complete, the clinical history being extremely good, and the differential diagnosis of the disease being clearly stated.

The various modes of treatment are then given, and their merits fairly discussed. The conclusions the author draws are mainly as follows:—

1. In early cases the small nodular ulcer should be freely excised with a knife or curved scissors.

2. The ecraseur is applicable to cases in which the disease is limited to some portion of the anterior part of the tongue.

3. When the tongue is more extensively involved, Whitehead's or Billroth's operations with scissors have the great advantage of enabling the surgeon to keep clear of the disease. In all extensive operations on the tongue, the lingual arteries should first be ligatured.

The book ends with chapters on malignant growths of the pharynx, œsophagus, and tonsils.

The value of the book is considerably enhanced by the statistics given of operations for each disease.

ON CONGENITAL OBLITERATION OF THE BILE DUCTS.*

ONE of the necessary complements of universal medical periodical literature is, that from time to time, some one should take up a subject and carefully collecting and collating all the scattered contributions previously made to it, present the whole in a digested form with such conclusions as may be logically deduced from the facts accumulated. This has been admirably done by Dr. Thomson in the case of the very interesting condition which gives the title to his booklet. Commencing by a clear account of an example which had come under his own observation, which is illustrated by an excellent drawing, Dr. Thomson proceeds to compare in a series of tables all the other cases he has been able to find, arrives at the conclusion that the condition is one of defective development, probably narrowness of the ducts causing catarrh and obliteration, or in some cases their disappearance. In consequence of the obstruction of the ducts the liver undergoes the changes characteristic of "biliary" cirrhosis, while the chronic blood poisoning causes vomiting, hæmorrhages, convulsions, emaciation, weakness, and death. The occurrence of the condition in several members of the same family suggests that a congenital error of development is at the bottom of the mischief, while the non-occurrence of jaundice until a few days after birth, is probably to be attributed to the condition of the fœtal circulation.

The volume also contains a report of a case of congenital obliteration of the small intestine, illustrated by a good drawing. Unfortunately, the child lived only two and a half days. Also a report of a case of partial obliteration of the gall bladder in a new-born infant, associated with other congenital malformations, with a drawing of the under surface of the liver. All the plates are lithographs of great merit.

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* On Congenital Obliteration of the Bile Ducts. By John Thomson, M.D. Edinburgh: Oliver and Boyd. 1892.

EPIDEMIC INFLUENZA.*

It is natural and right that the severe epidemics of influenza which have lately disturbed the public health should form the subject of much medical writing, and we are glad to see every aspect of the event thoroughly thrashed out. In the present volume Dr. Dixey has endeavoured by comparing the returns from London, Paris, and Berlin to investigate the relation of the epidemics to the prevalence of other diseases, to meteorological conditions and to age. His conclusions are based on a large number of carefully constructed tables, illustrated by diagrammatic charts, but they only confirm what was already well-known, viz., 1, that, during the epidemic, there was a great increase in deaths from respiratory disease, which may fairly be explained on the assumption that many of these cases were the sequelæ of undiagnosed influenza; 2, that meteorological conditions appeared in nowise to influence the course of the epidemic; and 3, that young children escaped fatal influenza to a great extent, while the mortality in advanced life was very severe. Nevertheless, we thank Dr. Dixey for having placed these conclusions on a very solid basis of figures derived from so wide a sphere of observation as the capitals of England, France, and Germany.

ANÆSTHETICS.†

This book is one of "Lewis's Practical Series," and quite comes up to the standard reached by the others. Dr. Buxton tells us very clearly indeed all the steps in the administration of gas and ether, both separately and immediately following one another. We have often noticed the difficulty students have in acquiring the art of administering anæsthetics, and we strongly advise them to read this book carefully so that they shall be able to administer their first anæsthetic with intelligence and some degree of confidence. As regards the administration of chloroform, he describes the various inhalers in use and also the method of using them. He then proceeds to describe the "open" method. Very rightly he insists on the pushing of the narcotic as soon as unconscious struggling sets in. The reader cannot have it too fully impressed upon him that whatever danger is present in this stage is due to muscular perturbation, and therefore the sooner the latter is overpowered the better for the patient. He also draws attention to the fact, which is often overlooked, that the conjunctival reflex is no test whatever in a child, and advises the administrator to be guided by the breathing and the flaccidity of the muscles. Dr. Buxton says that the pupil remains normal in size till very deep narcosis, when it dilates. The latter is quite true, but we think he is in error in the former. The reader's attention is drawn to the dangers and the complications, and their gravity and treatment are very clearly set forth at the beginning of the book in an interesting chapter on the history of anæsthetics. We can cordially recommend this book to all our readers.

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* Epidemic Influenza. A study in comparative statistics. By F. A. Dixey, M.A., D.M. Oxford: The Clarendon Press. London: H. K. Lewis. 1892.

† Anæsthetics: Their uses and administration. By Dudley Wilmot Buxton, M.D., B.S.

A GUIDE TO THE EXAMINATIONS IN SANITARY SCIENCE.*

This is a little book of only ninety-nine pages all told, so that it is evident to those acquainted with the extent of the examinations in Sanitary Science or State Medicine that the guidance must necessarily be limited. A perusal of the pages shews this to be the case, for in the list of books recommended several important omissions are to be noted. The bulk of the book is taken up with a collection of examination questions which have been set by the Universities and Corporations of late years, and these will be of service to candidates. Following this is a chapter with the title "Notes on Questions," which for its fragmentary character is of very doubtful value. The book will be of little use to the candidate who has read conscientiously, but as a "cram" book it will no doubt be hailed with pleasure by a certain class of student.

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* A Guide to the Examinations in Sanitary Science. By Herbert Jones, D.P.H. Camb. London : Baillière, Tindall and Cox.

THE SHEFFIELD MEDICAL JOURNAL.*

We are glad to receive the first number of this new venture and to congratulate its promoters on their enterprise. The journal is edited by Mr. Simeon Snell with the assistance of several other gentlemen, some of them in Sheffield and others living in the district around. This is, we think, a wise association, as the success of the review thereby appeals to a wider field of sympathisers.

The get up of the volume is excellent, the paper is of good quality and the printing is clear and readable. In addition to original articles, one of which is illustrated, there are some good periscopes and several reviews and notices of books.

THE ART OF MASSAGE. †

Those who need a full descriptive guide to Massage will find in this book all they can learn from mere print. There are numerous illustrations of the manipulations used in massage and of certain anatomical points bearing on the application of the Art.

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* The Sheffield Medical Journal ; a Quarterly Review of the Medical Sciences for Yorkshire and the adjoining Counties.

† The Art of Massage. By A. Creighton Hale. London : The Scientific Press. 1892.

Miscellany.

CHEMIST'S bell rings violently at 2 a m.—Chemist : "Well?" Angry voice yells back : "No, you idiot—ill !"

A YOUNG man, not long ago, went to consult his doctor about an ailment in his head. After due examination, Æsculapius said his brains were choked up with dirt, and would have to be properly washed and cleaned, and for that purpose would have to be left in his charge for a fortnight—and they were left accordingly. Months afterwards, the doctor met his patient in Grey Street, and slapping him on the back cried out, "You've never been to my place to get your brains." "By jingo ! I had forgotten all about them. The fact is, I never need them now, because I've got a job under the County Council." A friend of mine, who knows the young man, says it is a Government appointment he has got—not, of course, in the post office.

New Books, etc., Received.

An American Text-book of Surgery for Practitioners and Students. By numerous authors, and Edited by WILLIAM W. KEEN, M.D., LL.D., and J. WILLIAM WHITE, M.D., Ph.D. Profusely illustrated. Philadelphia : W. B. Saunders. 1892.

Advice to Women on the Care of the Health, before, during, and after Confinement. By FLORENCE STACPOOLE.

Our Sick, and how to Take Care of Them, or plain teaching on Sick Nursing at home. By the same Authoress. London : Cassell and Co. Limited.

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Surgery,
GILBERT BARLING, M.B., B.S. LOND., F.R.C.S.

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MUTUAL ASSURANCE WITH MODERATE PREMIUMS.

Scottish Provident Institution.

BIRMINGHAM OFFICE—95, COLMORE ROW.

ECONOMY — EQUITY — SECURITY.

THIS SOCIETY differs in its principles from other Offices. Its terms are specially adapted to the requirements of Medical Men and others whose Income is dependent on continuance of health.

INSTEAD of charging rates higher than are necessary, and afterwards returning the excess in the shape of periodical Bonuses, it gives from the first as large an Assurance as the Premiums will with safety bear, reserving the *whole Surplus for those Members who survive the period at which their premiums, with compound interest at 4 per cent. amount to the sums assured*—no share being given to those by whose earlier death there is actual *loss* to the Common Fund.

The WHOLE PROFITS go to the Policyholders, on the above system which is at once safe, equitable, and favourable to good lives. The SIXTH SEPTENNIAL INVESTIGATION showed a SURPLUS of £1,051,035 which, after reserving £350,345 for future division, was divided among 9384 Policies entitled. The first Bonuses ranged from 18 or 20 to upwards of 34 per cent. on sums assured.

The next Division of Profits will be made at 31st December, 1894.

The FUNDS (*increased in* 1890 *by* **£363,150**) now exceed

SEVEN-AND-A-HALF-MILLIONS.

The PREMIUMS are so moderate that at most ages an assurance of £1200 or £1250 may be secured from the first for the same yearly payment which would generally elsewhere assure (with profits) £1000 only,—the difference being equivalent to an immediate and certain "Bonus" of 20 to 25 per cent.

Annual Premiums for £100 at Death (with Profits).

AGE NEXT BIRTHDAY	25	*30	35	40	45	50
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d
Payable during Life	1 18 0	2 1 6	2 6 10	2 14 9	3 5 9	4 1 7
Limited to 21 Payments ...	2 12 6	2 15 4	3 0 2	3 7 5	3 17 6	4 12 1

* Thus a person of 30 may secure £1,000 at death by a yearly payment, *during life*, of £20. 15s. This Premium, in any other of the Scottish Mutual Offices, would secure **£800** only, instead of **£1,000.** The without profit rates of other Offices *differ little from these*, so that Assurers with them virtually *throw away the prospect of additions without any compensating advantage.*

Or, if unwilling to burden himself with payments during whole life, he may secure the same £1,000 by *twenty-one* yearly payments of £27. 13s. 4d.—*being thus free of payment after age* 50.

ENDOWMENT ASSURANCES with guaranteed rates of bonus are now issued on very favourable terms, and will be found specially suitable to those requiring the use of the sum assured during advanced age.

Reports, with full information, and Proposal Forms may be had on application to the Midland Branch,
95, Colmore Row, Birmingham GEO. A. PANTON, *Res. Secretary.*

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GERSTS